JPRS 80287

10 March 1982

USSR Report

ENERGY

No. 92

FBIS FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service (NTIS), Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semimonthly by the NTIS, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

Soviet books and journal articles displaying a copyright notice are reproduced and sold by NTIS with permission of the copyright agency of the Soviet Union. Permission for further reproduction must be obtained from copyright owner.

NOTICE

In the future, all material on the proposed Siberia to West Europe gas pipeline, as well as on pipelines carrying gas, oil and coal slurry within the USSR, will be published in the USSR REPORT: ENERGY in a new section entitled "Pipelines."

JPRS 80287

10 March 1982

USSR REPORT

ENERGY

No. 92

CONTENTS

ELECTRIC POWER

Prospects for Future Power Developments Examined
(B. Soskin; BAKINSKIY RABOCHIY, 22 Dec 81) 1

Socialist Obligations Undertaken by Power Workers
(KAZAKHSTANSKAYA PRAVDA, 13 Jan 82) 3

Questions Answered Regarding Power Forecast for Lithuanian SSR
(Yu. Nekrashas Interview; SOVETSKAYA LITVA, 22 Dec 81) 5

First Power Unit of Azerbaijan GRES Becomes Operational
(N. Velichenko; SOTSIALISTICHESKAYA INDUSTRIYA, 10 Dec 81). 7

GRES Construction Halted After Ten Years
(Yu. Krasnopol'skiy; TRUD, 29 Dec 81) 9

Preparations Underway for Construction of Khudonskaya GES
(M. Gogokhiya; ZARYA VOSTOKA, 22 Oct 81) 13

Briefs

Twelfth Generating Unit 15
New Transmission Line 15
Power From Second Generating Unit 15
Record Installation Time 15
Transmission Line in Mountains 16
Second Unit at Kurpsayskaya GES 16
Power Bridge to Kuzbass 16
Solar-Powered Recharging Station 17
High-Voltage Line 17
Gazalkentskaya GES 17
Million-Watt Generating Unit 17
Fifteen-Kilometer Tunnel 17
Colocated Vehicle Plant and GES 18
Consolidated Regional Production Base 18

High-Output Unit 18
New Switching Gear 18
Early Commissioning 18
Novodnestrovsk Hydroelectric Plant on Line 19
500-KV Transmission Line in Caucasus 19
Power Line in Tayga 19
Baykal-Amur Aluminum Deposits 19
Electrification Progress in Armenia 20
New Generator at Ryazan' Plant 20
New Generator 20
New Central Heating Plant 20
New Generator on Line 20
Transformer Production 20

FUELS

Gas-Lift Compressor Station Increases Surgut Oil Output
(Yu. Mashinov; SOTSIALISTICHESKAYA INDUSTRIYA, 3 Jan 82) .. 21

Pavlodar Oil Refinery Commitments Revealed
(SOTSIALISTICHESKAYA INDUSTRIYA, 12 Jan 82) 23

Urengoy-Novopskov Gas Pipeline Construction Begins
(SOTSIALISTICHESKAYA INDUSTRIYA, 16 Jan 82) 25

Automatic Pipe Welder Shortens Work Time
(Yu. Belanov; SOTSIALISTICHESKAYA INDUSTRIYA, 5 Feb 82) ... 27

Review of Encyclopedia for Mining Engineers
(L. M. Geyman; RAZVEDKA I OKHRANA NEDR, Nov 81) 29

Oil Discovered in Yakutskaya ASSR
(V. Nikolayev; PRAVDA, 9 Dec 81) 32

Inspectors Call for Better Inventory of Materials, Equipment
(I. Nikitin; EKONOMICHESKAYA GAZETA, Dec 81) 34

Siazan' Oil Workers Air Complaints
(O. Nechipurenko; VYSHKA, 14 Nov 81) 36

Problems, Progress of Artem Oil Field Outlined
(I. Golovina, et al.; VYSHKA, 5 Dec 81) 40

Drilling Problems at Pirsagat Oil Field Revealed
(O. Nechipurenko; VYSHKA, 13 Dec 81) 43

Problems Encountered in Deep-Well Drilling in Kyursangya
(O. Nechipurenko; BAKINSKIY RABOCHIY, 27 Nov 81) 46

Specialized Office Solves Many 'Azneft'' Oil Drilling Problems
(V. Rafiyev; BAKINSKIY RABOCHIY, 27 Nov 81) 49

Efficient Production, Use of Fuel Stressed
(RADYANS'KA UKRAYINA, 21 Nov 81) 52

Gas Pipeline Through Ukraine Discussed
(M. O. Ishutin Interview; RADYANS'KA UKRAYINA, 6 Dec 81) ... 54

Tasks of Ukraine Natural Gas Workers Outlined
(RADYANS'KA UKRAYINA, 23 Dec 81) 56

Briefs

Imide Additive Shop 58
Rovno Nuclear Power Plant 58
Khar'kov Natural Gas Production 58

ELECTRIC POWER

PROSPECTS FOR FUTURE POWER DEVELOPMENTS EXAMINED

Baku BAKINSKIY RABOCHIY in Russian 22 Dec 81 p 2

[Article by B. Soskin: "According to Lenin's Plan"]

[Excerpt] The Bakinskiy Rabochii correspondent turned to Muslum Museib ogly Imanov, chief of "Azglavenergo", and asked him to tell about the basic stages of development of power engineering in the country and Azerbaydzhan, its current status and future prospects.

An urgent task of Republic power workers in the 11th five-year plan is to accelerate the development of rural power network facilities and to improve the technical condition of existing networks. We shall continue electrification of sheep pens in winter pastures, which will require building over 3,000 kilometers of transmission lines and a large number of transformer substations; we are to appropriate 82 million rubles for rural electrification - 1.6 times more than in the 10th five-year plan.

Although the capacity of the system had reached 2.632 thousand kilowatts by the end of the 1960s, the increase in power consumption due to the dynamic development of the economy of many regions of the Republic was not foreseen. As was emphasized at the Plenary Session of the Central Committee of the Azerbaydzhan Communist Party in December 1981, late starting of capacities in the Republic has resulted in a disproportion between the production and consumption of electricity, which, naturally, has had an effect on the power supply of certain branches of the economy.

A qualitatively new stage in power engineering in Azerbaydzhan, which is an inseparable component part of the Union fuel and power program, has begun in the 11th five-year plan. It will be based on the introduction of 1.580 thousand kilowatts of generating capacity at the Azerbaydzhan GRES [state regional power plant] and the Shamkhorsk GES [hydroelectric power plant]. It would like to point out that this is almost as much as the entire GOELRO [State Commission on the Electrification of Russia] plan.

During the current five-year plan, we must begin construction on the Yenikendskaya GES and accelerate the planning and start construction of the Novo-Bakinskiy TETs [heat and electric power plant]. This TETs will make it possible to improve the power supply of the Apsheronskiy industrial center, to eliminate a large number of uneconomical boiler installations, to free 2500 service personnel; it will save 800,000 tons of conventional fuel annually and, most importantly, will revitalize the air of the Republic capital.

On the threshold of Leonid Il'ich Brezhnev's 75th birthday and on the eve of a week of shock labor devoted to power engineering and the traditional professional holiday of branch workers, the first power unit of the Azerbaydzhan GRES has been put into production operation. This is all new.

Last year there were 142 300,000-kilowatt units in operation, but none of them approaches the unit at the Azerbaydzhan GRES, which is a prototype. Unprecedented modern automation of electricity production is in use. A computer will control the firing up of the flow-through boiler with supercritical steam parameters, the first in the Transcaucasus, as well as starting the turbine, bringing the generator on line and operating the unit under load. This GRES has, for the first time, implemented a complete system for cleaning exhaust water and waste gases, which will prevent pollution of the Kura and the atmosphere. The water used to condense the spent turbine steam will be taken from a level in the Mingechaurskaya GES where the temperature is practically constant, which will ensure high efficiency of the turbine equipment throughout the year.

The plant is now connected to the Mingechaurskaya GES and the "Akstafa-330" intersystem main substation via two 330,000-volt power transmission lines. By the end of the five-year plan, the GRES will be sending power to Apsheron over a 500,000-volt transmission line, which is in a class which is new for the Republic. The start-up year for the Azerbaydzhan GRES is marked by genuinely intensive labor. The first unit was put into industrial operation two months ahead of schedule. The Central Committee of the Azerbaydzhan Communist Party and the Mingechaur party organization have provided invaluable assistance.

The collective of builders, installers, designers, mechanics and operating personnel are faced with a priority task in the second year of the 11th five-year plan, namely bringing the second power unit at the Azerbaydzhan GRES and the first hydroelectric unit at the Shamkhorskaya GES on line. This is a battle assignment whose successful execution will become a matter of working honor and valour of everyone involved in constructing the largest power facilities in the Republic.

6900
CSO: 1822/84

ELECTRIC POWER

SOCIALIST OBLIGATIONS UNDERTAKEN BY POWER WORKERS

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 13 Jan 82 p 3

[Unsigned article: "We Will Fulfill the Plan. Socialist Obligations of Enterprise and Organization Collectives of the Ministry of Power Engineering and Electrification of the Kazakh SSR for 1982 and the 11th Five-Year Plan"]

[Text] The workers of the organizations and enterprises of the Ministry of Power Engineering and Electrification of the Kazakh SSR, implementing the resolutions of the 26th CPSU Congress and the 15th Congress of the Kazakhstan Communist Party, have fulfilled the basic plan assignments and Socialist obligations of the first year of the 11th five-year plan. Electricity production increased by 3.6%, and thermal energy production by 2.4%, over 1980. New power units have been put into operation at GRES-1 [state regional power plant] at Ekibstuz and TETs-2 [central heating and power plant] heating and power plant-2 at Alma-Ata; the construction and installation plan for GRES-2 at Ekibastuz is being overfulfilled. Measures taken to re-equip, mechanize and automate production processes have yielded annual savings exceeding 3 million rubles, including 0.4 million rubles in excess of the plan.

Under the guidance of the resolutions of the November (1981) CC CPSU Plenum, and based on the tasks put forth by Comrade Leonid Il'ich Brezhnev, Secretary General of the CC CPSU and President of the Presidium of the Supreme Soviet USSR, in his speech to the Plenum, Republic power workers, undertaking socialist competition for successful fulfillment of the 1982 national economic plan and the 11th five-year plan under the banner "60 high-pressure weeks of work for the 60th anniversary of the formation of the USSR", are undertaking the following obligations:

to continue power construction at accelerated rates. To complete the construction of GRES-1 at Ekibastuz and, without slowing high speed assembly-line construction, bring the first power units on line at GRES-2 at Ekibastuz by the end of the five-year plan. To bring on line the first equipment at the Shul'binskaya hydroelectric station, and to bring TETs-2 at Alma Ata and TETs-2 at Tselinograd to their plant capacity as soon as possible.

To increase the production of electricity in 1985 by a factor of 1.6 over 1980, producing 86.2 billion kilowatt hours, thus covering the loads of the Republic economy from local power stations and transmit the excess power to neighboring regions in the Urals and Siberia.

In order to provide reliable electric power to the industrial regions of Dzhezkazgan, Balkhash, Aktyubinsk and Alma-Ata, build and bring on line the Agadyr'-dzhezkazgan transmission line (1983) Agadyr'-Balkhas (1982), Irikla-Aktyubinsk (1983), Agadyr'-Alma-Ata (1985).

Accelerate power network construction in rural areas. Connect all departments and firms of sovkhozes and kolkhozes to state power systems within the five-year plan.

Take measures to rehabilitate, update and replace equipment at the Yermakovskaya GRES, the Karaganda GRES-1 and a number of other thermal power stations, and increase by 20% the level of centralized heat supply of cities.

Implementing the social development plans of collectives, introduce at least 500,000 square meters of living area within the five-year plan. Construct the Power Workers' Palace of Culture with a 1,000-seat auditorium in Ekibastuz. Train 4,800 new workers for the branch. Increase the qualification level of 33,700 workers and 6,800 engineering-technical workers and employees. Introduce collective forms of organization and stimulation of labor more actively.

Based on increasing the creative activity of workers, improving executive discipline, improving planning and organization of labor, conduct a repair campaign in 1982 and prepare power equipment for work during the spring and winter of 1982-1983 with high quality, and bring power units number 1,2 and 3 at Ekibastuz GRES-1 up to their plan specifications, thus guaranteeing uninterrupted power supply for consumers in the Republic.

Bring 1.5 million kilowatts of new turbine capacity on line at Ekibastuz GRES-1, and a new phase-4 boiler at the Ekibastuz TETs.

By taking measures to introduce advanced technology, mechanization and automation of production processes at industrial and construction enterprises, obtain annual savings of at least 3.3 million rubles, and 4.3 million rubles from introducing rationalizers' suggestions and inventions. Bring the first phases of the automated process control systems on line at "Karagandaenergo" and "Altayenergo".

In order to save the hydraulic power resources of the Bukhtarminskiy reservoir, finish construction of the 500-kilovolt Ust'kamenogorsk substation, bringing the Rubtsovsk-Ust'-Kamenogorsk transmission line up to its design capacity.

Continue work to develop auxiliary facilities at enterprises in the branch.

The workers of the enterprises of the Ministry of Power Engineering and Electrification of the Republic will make a worthy contribution to the accomplishment of the grand tasks of Communist construction, and will successfully fulfill the plan and accepted Socialist obligations for 1982 and the 11th five-year plan as a whole.

These obligations have been discussed and accepted at meetings of the workers, engineering-technical workers and employees of the enterprises and organizations of the Kazakh SSR Ministry of Power Engineering and Electrification.

6900
CSO: 1822/84

ELECTRIC POWER

QUESTIONS ANSWERED REGARDING POWER FORECAST FOR LITHUANIAN SSR

Vil'nius SOVETSKAYA LITVA in Russian 22 Dec 81 p 3

[Interview with Yu. Nekrashas, chief of the Main Industrial Administration of Power and Electrification of the Lithuanian SSR, by correspondent El't R. Chesna: "A Look to Tomorrow"; date and place not given]

[Question] The 11th Five-Year Plan will undoubtedly go down in history as a particularly important period in the construction of power-generating facilities at the Ignalinskaya AES, the Kayshyadorskaya GAES and finally the Vil'nius TETs-3 and the Mazheyskaya thermal electric-power station.

[Answer] Our people ask: "Is this too much for one five-year plan?" I must say that the five-year program for the development of the republic's power industry is thoroughly well founded. It stems from the projected development of the entire country's power system and will contribute to solving the problems involved in intensifying the economy of the country and the republic.

Plans have been made to commission two reactors of 1.5 million kW capacity each at the Ignalinskaya AES during the current five-year plan. These two reactors will make it possible to generate almost twice as much electricity as is now generated by all the republic's electric-power stations. The Kayshyadorskaya GAES will become a unique "satellite" of the Ignalinskaya nuclear power station. It will help regulate the utilization of electric power throughout the entire power system of the northwestern USSR, where the demand for electric power is greatest during the daytime and surplus power is generated at night.

The second phase of the Mazheyskaya thermal electric-power station is being built based on the projected development of this new industrial center. The republic's capital cannot do without this new "heat factory." The Vil'nius TETs-3 in intended to aid in supplying heat to new inhabited regions.

The fixed capital in the republic's power-generating system will increase by a factor of two over the course of the five-year plan. The production of electric power will increase two-fold, that of thermal power by a factor of 1.6.

[Question] I wonder, how will the structure of electric-power consumption change and what new professions will electricity "take over"?

[Answer] The consumption of electric power in industry will increase by 22 percent and in agriculture by 53 percent. These are qualitative changes in the republic's power balance.

It is particularly important that the extent of electrification in the economy increases at an accelerated rate. Last year each worker in the village was "helped" on the average by 4,500 kWh of electric power. In the current five-year plan, however, we will seek to have the electric power available to each farmer increase by a factor of 1.5.

Up until the present time, the greater portion of electric power utilized went for supplying water, milking cows, removing manure and irrigating the fields. Today's power engineers together with agricultural workers are seeking possibilities for its broader application--for hot presses, for preserving fodder and for heating cattle farms. The Institute for the Mechanization and Electrification of Agriculture, for example, has created efficient storage furnaces which will utilize electric power only at night--during the hours of its lowest demand.

Qualitatively new production processes are being introduced in industry in which electric power acts directly on the materials. These are the spheres of utilization of powerful magnetic fields, high-speed electrons, lasers and microwaves.

The most extensive application of electric power can be found in the home. In new sections of certain cities, for example, homes will be equipped with electric stoves instead of gas.

[Question] What is being done to improve the centralized production and delivery of thermal power?

[Answer] As I already pointed out, one of the most important parts of the five-year plan is the construction of the Vil'nius TETs-3. This thermal electric-power station whose initial output will be commissioned in 1983 will make it possible to provide additional heat to several tens of thousands of flats in Vil'nius. New units will also go on stream at the Mazheyskaya and Kaunasskaya heat-and-electric power plants.

In order to satisfy the needs of consumers in Klaypeda, Shyaulyay, Panevezhis, Alitus, Utena and other cities, district boiler plants are being developed and heating mains are being laid. All of this will make it possible to do away with several hundred small, uneconomical boiler plants which pollute the air.

In all sections, about 11-12 percent of generated power is today being lost on its way to the consumer. Consequently, a reduction of these losses is of immediate benefit. We plan to implement an entire complex of organizational-technical measures so that these losses will be reduced considerably over the five-year plan.

Economists assert that the innovations being used to conserve fuel are two and a half times cheaper than measures associated with the mining and transportation of the fuel. This is why in the current five-year plan we have planned to implement an extensive program for the introduction of scientific and technical innovations. In 1985 this will provide for a savings of approximately 75,000 tons of fuel on a republic-wide scale.

9512
CSO: 1822/59

ELECTRIC POWER

FIRST POWER UNIT OF AZERBAIJAN GRES BECOMES OPERATIONAL

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 10 Dec 81 p 1

[Article by N. Velichenko, assistant of OGNI MINGECHAURA: "We Have Voltage"]

[Text] The installation workers and operations personnel who had gathered near the control panel followed the way the parameters changed. The temperature and the pressure rose. The instruments recorded 400 degrees and 40 atmospheres. The command came: "Turn on the steam to the turbine!" As if unwillingly, the turbine began to move, rotating about its gigantic shaft faster and faster. One thousand rpm! Two! Three thousand! The generator, too, was successfully engaged. The instruments indicated the appearance of electric voltage.

While the specialists are engaged in a delicate, intricate operation, the point of which is to connect the first power unit of the Azerbaijan GRES to the Transcaucasus Unified Power System, we will digress in order to recall the most interesting episodes in the construction.

This GRES in Mingechaur is by rights called a construction project of friendship. The equipment was delivered in advance, according to an accelerated schedule. The unique gas-tight boiler unit was manufactured at the Krasnyy Kotel'shchik plant in Taranrog. The Elektrosila association in Leningrad supplied the generator, while the turbine is the fruit of the labors of electric-equipment builders in Khar'kov. At the peak of installation and adjustment of the equipment, more than 4,000 qualified specialists from all corners of the country were at work here: installation workers from the Kola Peninsula, Leningrad, Volgograd, Riga, Kuybyshev and other cities of the country. In Mingechaur and throughout all of Azerbaijan, people speak with particular affection of the work team of Hero of Socialist Labor Yuriy Toroptsev from the Nevinnomyssk section of the Kavkazenergomontazh trust. This team set the tone of all the work. We will note that there is no thermal station in Azerbaijan where this ace installation worker has not left a good impression and his working signature.

The commissioning of the first power unit considerably ahead of schedule was achieved not only through the concentration of manpower and material resources. A truly innovative attitude toward work helped to speed up the event. The introduction of new technology alone when the installation operations were carried out saved more than two million rubles as against the design. The installation of the main units was done using preassembled modules. For the first time in a region with a high water table, shallow foundations were employed. This reduced the time necessary to carry out the work and insured a great technical and economic impact.

A number of installations at the Azerbaijan GRES are considered to be unique, and rightfully so. There is a 330-meter smokestack which guarantees clean air over the city and the settlement of power engineers growing up nearby. There also is, of course, the structure of the deep water-intake. An engineering concept suggested a wise solution: take the water needed to cool the turbine from the very bottom of the Mingechaur reservoir extending beyond the mountain. A kilometer-long tunnel was run through the mountain. Bottom water at a constant temperature of 14 degrees will be delivered through this tunnel. Such a low year-round temperature for the cooling water has a positive effect on one of the major indicators of thermal-power station operation--the economical expenditure of fuel. Only 325 grams of conventional fuel will be used for the generation of one kilowatt-hour of electric power at the Azerbaijan GRES. This is much lower than at any other operational thermal power station in the Transcaucasus.

A computer has been built into the control unit of this GRES. It provides optimum operating conditions, maintains specific fuel-consumption levels and monitors the basic parameters of station operation. The station's central control panel is automatically connected with the panel of Azglavenergo in Baku. Thus, the situation at the station, line loads and other parameters can be monitored directly along telemetering channels from Baku. There is one other important advantage of the new GRES. The specialists who have designed this power installation were most seriously concerned about measures to protect the environment. The combined purification and utilization of industrial discharges and the return of these discharges to the station's working cycle practically exclude the pollution of both the air and water basins.

And so, the moment the builders of the Azerbaijan GRES had waited for with such impatience had arrived. The parameters of the generator and the Azglavenergo system coincided on the central control panel. Current hummed in the electric transmission lines. The start-up of the first generating unit of the Azerbaijan GRES with an output of 300,000 kW was accomplished ahead of schedule.

The early completion brought about by the power-station builders will make it possible for the station to generate tens of millions of kilowatt-hours of electric power this year and to improve considerably the amount of power available per worker in Azerbaijan industry. Finally, we will note that along with the construction of a thermal power station, plans have been made for the construction in the coming years of an entire cascade of hydroelectric stations in the republic on the Kura. One of these stations--the Shamkhorskaya--is already under construction and will not only be important in the power industry. The lofty dam and huge reservoir with a capacity of approximately 2.7 billion m^3 of water will irrigate the empty lands in the west of the republic. Construction of the Yenikendskaya GES between Shamkhor and Mingechaur as well as the Kirzanskaya GES has already been planned.

9512
CSO: 1822/59

ELECTRIC POWER

GRES CONSTRUCTION HALTED AFTER TEN YEARS

Moscow TRUD in Russian 29 Dec 81 p 2

[Article by Yu. Krasnopol'skiy: "Do Not Repeat the Mistake"]

> [Text] "We, the workers of the Chigirinskaya GRES construction administration (Cherkasskaya Oblast), address your newspaper with a request to assist us in solving some urgent matters. Nine years ago we left our homes and came to this construction site. We have never seen, however, such a state of affairs as we have now. Constant idle periods, the lack of a work front, organizational foul-ups, etc. Even up to this day we cannot tell just what it is we are building. Since 1972, when the work began, the GRES design has been revised several times. First they said that the station would burn fuel oil, then they said it would burn coal. There is now a rumor that a new station layout will have to be developed. In the meantime, in order to keep the people busy, they are sent on temporary assignment to other Minenergo construction projects.
>
> Now a word about the way we live. More than a thousand people live in the builders' settlement. We have a store and a dining facility. The kindergarten and school, however, are located 20 km away in the city of Chigirin. It is cold in our houses in winter, and occasionally the electric power is shut off.
>
> As paradoxical as it seems, we have ended up in a situation where we do not know to whom we should present our claims: construction-site management turns over so rapidly that we cannot manage to remember their names. Who will finally concern themselves with us and our children?"

This is the letter that arrived at out editorial office. On it were 80 signatures. The people had already addressed the construction administration and the construction committee. The administration promised to look into the matter, but everything has remained as it was before. Every morning in the autumn rain or the winter cold, the parents put their kids into the bus and ship them miles away--to the kindergarten or the school. They are frequently sick, the parents worry. The people are upset. "What can be done? It's all so complicated, you can't solve it in a hurry," they replied to the workers when confronted with their problems. Are these domestic problems really all that unsolvable?

Having previously acquainted Minenergo with the builders' letter, the editorial board put this question to the Minenergo administration. As it turned out, the problems that had been the subject of discussion over the course of recent years could be solved in just one week.

The editorial board was informed of this by V. Mikhaylov, deputy director of Soyuzatomelektromash, who had visited here as part of the special committee for the construction of the Chigirinskaya station. And so, first of all, the problem of the kindergarten. Up until recently it was felt that there was no place to locate it in the settlement. All they had to do, however, was to look more carefully, and they found a decent place for it. The kindergarten will begin operations in January 1982. The schoolchildren were bused to classes 20 km from the settlement. It turns out that there is a place for the school, too. The power supply had to be set up, and the heating turned out not to be such a complex problem, either. A barber shop, radio workshop and domestic-services receiving point are now in operation. In a word, many problems about which the builders had written were solved in record time.

One could be happy with such efficiency if it were not for one thing. I can in no way understand why people were forced to endure deprivation and inconvenience for so many years. Is it possible that these problems just cropped up yesterday? Or, did they escape the notice of the construction committee and ministry workers who visit here quite frequently? Why do the officials put off the just requests of the workers with empty promises? One would wish to believe that serious lessons for the future could be drawn from this story, and not only in the area of domestic issues. The beginning of the workers' letter deals with a much more serious problem. You will recall: "We cannot tell just what it is we are building."

Everything began in 1971, when the technical and economic foundations were laid for the construction of the Chigirinskaya electric-power station. The approximate output was determined for the station on the banks of the Kremenchug reservoir--4.8 million kW. The chief designer--the Kiev branch of Teploelektroproyekt--worked out various alternative designs. They decided upon, it would seem, the most profitable: a conventional station utilizing fossil fuel. Indeed, there are large-scale refineries nearby. One need only run a pipeline from the refineries and pump oil into the station's burners. The USSR State Planning Committee gave its "approval" with its resolution Number 28 of 26 April 1972. In a word, the Chigirinskaya GRES was initially designed to use fuel oil and seasonal excesses of natural gas. The sum of 2.3 million rubles was allocated for the design. It was worked out and passed all consents, approvals and examinations of the State Committee for Construction, the State Planning Committee and, finally, the Ministry of Power and Electrification of the USSR itself. Things, however, did not get as far as the final approval.

From as long ago as our school days we remember these capacious words: "Burning oil means burning money." Had it not been clear from the very beginning that it would be unprofitable and inefficient to build a station that burned fuel oil? Alas, they did not see this until 1975 when the USSR State Planning Committee changed the type of fuel for the Chigirinskaya GRES and switched it to gassified coal from the Donbass.

Indeed, this meant simply scratching the previous design and beginning everything anew. This they did. Estimates showed that the new detail design should have cost an additional 2.4 million rubles. Meanwhile, more and more people kept coming to the construction site since 1972. They settled in this new location. They built the first block of flats and laid roads. Gradually the outline of the structure began to emerge: the subsidiary industries appeared, and construction began on a wharf for vessels on the shore of the Kremenchug reservoir. In a word, things moved ahead and life took its normal course. The client--the USSR Ministry of Power and Electrification--wanted to save time and conduct the construction operations and the design development in parallel. They wished to do things as well as possible, but it turned out otherwise.

The change in the station's mode of operation demanded a great amount of work on the part of the designers. It was necessary to make provisions for a railroad and many other facilities. Based on the situation at the time, the maximum output of the GRES exceeded 3.2 million kW.

Once again there were consents, checks and approvals. Everything was checked, and the plans were refined in the most careful manner, or so it seemed. On 16 March 1977 an expert commission on science and technology from the USSR State Committee recommended and approved the technological portion of the design. On 30 May the Main Expert Commission of the USSR State Committee on Construction also approved the design of the 3.2-million kW Chigirinskaya GRES. The document was signed by deputy chief of Glavgosekspertiza Ye. Minayev and chief of the department of power engineering and heat supply B. Kobyakov.

A similar conclusion was reached by the Designs, Estimates and Approvals Board of the USSR Minenergo and by other interested organizations. The design was finally approved. You will note that this took place five years after the start of construction. It happened in the same year that the station's two generating units were to have been connected to the unified power system in the country's south.

It would seem that there could be no more mistakes and that everything had been checked and rechecked many times. However, strange as it may seem, the competent experts, commissions and councils of various ministries and departments made a serious, unforgivable mistake this time, too. All they did was miscalculate in determining if there would be enough Donets coal for the Chigirinskaya GRES. Some trick! Indeed, this is the basis on which it is necessary to begin the calculations, the main link without which there can be no design. The most surprising thing is that it is impossible to find the guilty parties. The decisions were made collectively--dozens of signatures and approvals and dozens of organizations. You cannot find those personally responsible. Should not, however, someone answer for this mess?

Let us return, however, to events at the construction site. Three years after the second design was approved--more precisely, in November 1978--the miscalculations in determining the Donets coal reserves were taken into account, and a decision was made to reduce the output of the Chigirinskaya GRES exactly by half--to 1.6 million kW. Another 152,000 rubles were paid out for adjusting the design.

The constant adjustments totally disorganized the work at the site. Work went along so-so. Things continued this way until 1981. One might say it went like this until the jubilee: exactly 10 years had gone by since the time the technical and economic substation at the Chigirinskaya GRES had been created.

A document appeared on 29 October:

"Directive of the USSR Ministry of Power and Electrification

Paragraph 3.1.

In connection with the cessation of construction at the Chigirinskaya GRES, it is necessary to decommission the industrial, domestic and civil installations in accordance with appendices 1 and 2.

Minister--P. S. Neporozhniy"

This "directive" put an end to the ten-year history of miscalculations in the construction of the Chigirinskaya power station.

Do you happen to know what is now taking place alongside the city of Chigirin on the shore of the beautiful Kremenchug reservoir? It is referred to as construction-site decommissioning. The people who erected the station are now boarding up the doors and windows with their own hands, covering the equipment and removing what cannot be preserved for long. The incompletely built pumping stations, warehouses, the asphalt plant, clinic, dining facility, water and heating networks and lines of communication--about 30 installations in all--will be subject to decommissioning.

Guilty? That is the wrong word. The wasted time, the peoples' labors and the State funds are enough to bring tears to your eyes and break your heart.

Now the four powerful design organizations of the USSR Minenergo have scratched everything done earlier and have taken up the development of a new station. New limits are being apportioned again, studies are being conducted again, everything from the beginning. What time is this? The two designs completely written off as defective are now valuables for an archive, perhaps. Indeed, almost five million rubles have been spent on them.

People are leaving the site. Now there will be a kindergarten and school for their children. A new store will open soon. All of this does not make them happy. They are not happy because for the nine years given to this site, they did not know real work. Now they are agreeing to go where their hands are needed. Let there be domestic confusion and the unsettled nomadic life--in return there will be real things to do, important work.

It stands to reason that the situation which took shape in Chigirin is disturbing and exceptional. We related this story so that we will not have a single similar case and so that we can increase responsibility for the quality of designs.

9512
CSO: 1822/72

PREPARATIONS UNDERWAY FOR CONSTRUCTION OF KHUDONSKAYA GES

Tbilisi ZARYA VOSTOKA in Russian 22 Oct 81 p 2

[Article by M. Gogokhiya: "There Will Be a New GES"]

> [Text] A powerful giant--the Khudonskaya GES--will rise up on the Inguri River near the mountain village of Khaishi. The builders are devoting much of their work and skill in order to hasten without fail the day when the new station goes on stream. This is sure to happen. Meanwhile, preparatory operations are underway here at the site of the future hydroelectric station.

Construction has already been completed on a 150-meter motor-vehicle tunnel ahead of the schedule which had been worked out. Construction is underway on the forward section of the construction tunnel entrance, retaining walls and temporary buildings and structures. The 40-kilometer highway connecting the village of Khaishi with the city of Dzhvari is being improved, and a concrete plant is being set up.

In a word, a great undertaking has been started. The Khudonskaya GES, which is being built according to a design developed by specialists of the Tbilisi branch of the Scientific Research and Design Institute imeni S. Ya. Zhuk, is intended for operation within the Transcaucasus Unified Power System. The power generated by this station will be utilized to cover the daily power-load schedule, primarily during peak periods. In certain summer months, when the river is high, the power will only be used during the base periods. The arched concrete dam will be a pilot structure for the hydroelectric station. It will be 196.5 m high and 510 m long at the crest. The GES building will be situated in a rocky mass on the right bank of the Inguri. Three radial-axial turbines with an overall output of 740 MW will in installed in the GES building.

There remains much to be done by the hydraulic engineers of Ingurigesstroy, who are the general contractors here at the construction site. The beginning of this large-scale construction project is encouraging. The builders' collective is considerably ahead of the annual program. The work team headed by G. Dzhakhaya is working with dispatch on a segment of the structural tunnel. The collective of this integrated work team together with a team headed by K. Markhuliya has assumed responsibility for building the connector on the upper branch of the tunnel by January of next year. This they will do in honor of the 60th anniversary of the formation of the Soviet Union. Such drilling tempos are necessary to insure the diversion of water through the structural tunnel by the 1983 flood season and to begin the construction of the hydraulic system's major structures. Already 269 of 438 linear meters of rock have been traversed. Experienced drillers Kh. Narsiya, V. Arziani and others are laboring selflessly on the segment. Thanks to their skill, work teams are picking up the pace and are coming closer and closer to their planned goal--the connection of the tunnel.

The joint team headed by S. Tadeyev does not lag behind these leaders, either. This team is working on drilling the diverter tunnel. Here there are rapid work tempos and outstanding quality. Having fulfilled the present schedule, on the eve of Power Engineering Day the work team committeed itself to completing all the work on this segment by 1 May of the coming year.

Today the socialist competition to achieve the highest labor results has been widely extended at the construction site. All participants in the construction of this new power giant on the Inguri are working at full output. These builders actively supported the patriotic call of the inhabitants of Moscow to mark the 60th anniversary of the USSR with accelerated work. Many of them are successfully carrying out their socialist obligations. The successes they have achieved in the current year are a solid foundation for rhythmic work in the coming year and for the implementation of the resolutions of the 26th CPSU Congress and the 26th Congress of the Communist Party of Georgia.

9512
CSO: 1822/59

BRIEFS

TWELFTH GENERATING UNIT--Navoi, 26 Dec (TASS)--Today the 12th generating unit of one of the largest electric-power stations in Uzbekistan--the Navoiyskaya GRES--began producing commercial power. The output of this generator, connected to the Central Asian Unified Power System, is 210,000 kW. Work on expanding and modernizing the Navoiyskaya GRES which was begun in the previous five-year plan has been completed. Two new generating units installed at the station have made it possible to increase the station's output by a factor of 1.5. High-voltage transmission lines connecting Navoi with other power centers in the region were laid at the same time. [Text] [Moscow PRAVDA in Russian 27 Dec 81 p 2] 9512

NEW TRANSMISSION LINE--Abakan, 11 Dec--Work has expanded along a broad front on the 400-km right-of-way for a new 500-kV two-circuit transmission line. The power of the Sayano-Shushenskaya GES will travel to the Kuzbass along this line. This mighty power bridge between Sayany and Novokuznetsk is being constructed by power linemen from Krasnoyarsk and Novosibirsk. The Krasnoyarsk linemen have completed the construction of the foundations of the first circuit on one segment. Towers have been installed for almost 40 km. Today the linemen are assaulting the snowy slopes of the Dzhoyskiy Range and the foothills of the Kuznetskiy Alatau. [Text] [Moscow PRAVDA in Russian 12 Dec 81 p 1] 9512

POWER FROM SECOND GENERATING UNIT--Cheboksary, 27 Nov--The first electric power was delivered to the country's unified power system from the second hydraulic turbogenerator unit of the Cheboksarskaya GES. Consolidation of the assemblies in the third turbogenerator is now underway in this hydraulic system--the concluding stage in the Volga power cascade. The equipment arrived from enterprises in Leningrad, Povolzh'ye and other industrial centers of the country. [Text] [Moscow PRAVDA in Russian 28 Nov 81 p 1] 9512

RECORD INSTALLATION TIME--Novomichurinsk, 31 Dec--A sixth generating unit with an output of 800,000 kW was commissioned at the Ryazanskaya GRES. Now this electric-power station on the Pronya has an output surpassing any of the operating power giants on the Volga (2.8 million kW) and has become one of the thermal-power industry's flagships. "The start-up of the sixth unit at the Ryazanskaya GRES," said Deputy Minister of Power and Electrification Of the USSR N. Lopatin in commenting on the event, "is a notable milestone in the development of the industry." This unit with an output of 800,000 kW was installed in a record short period of time--one year exactly. The superior achievement of the Zaporozhskaya GRES was surpassed by four months. Success was insured by the fact that industry headquarters and local party organs achieved precise cooperation among designers, builders and equipment suppliers.

The power engineers express their warm thanks to the machine builders of Leningrad and Taranrog who delivered the turbine, generator and boiler to the construction site ahead of schedule. The other equipment also arrived without delay. Just as well coordinated were the activities of the builders from Glavtsentroenergostroy together with their subcontractor installation workers. From the very beginning, the work was organized in three shifts according to a sliding schedule. The principle of parallel action--the simultaneous conduction of construction and installation operations on one site--was applied here on a broad scale for the first time. The heat of socialist competition among all participants in the installation and start-up of the sixth power unit was great. The organizers of labor competition applied a flexible system of moral and material stimulation of the distinguished collectives, actively informed the builders of the records and disseminated advanced work methods. It is characteristic that the accelerated pace did not reduce the quality of the work. The testing conducted before start-up showed that the major units and assemblies had been put together with such skill that adjustment was not required. The preparation for start-up proceeded exactly according to the calculated schedule. The record on the Pronya is particularly valuable in that units of similar output will comprise the foundation of power construction in the Kansko-Achinsk complex and in all regions of Siberia and the East. This sixth Ryazanskiy unit will become the standard for Siberian builders. [Text] [Moscow PRAVDA in Russian 1 Jan 82 p 1] 9512

TRANSMISSION LINE IN MOUNTAINS--Przheval'sk, 4 Dec--The highest mountain electric transmission line in the country--from Barskoon to Akshiyrak--traverses the 4,000-meter high Tyan'-Shan' ranges. Remote mountain villages in the west of the republic are now connected to the State power system. The powerful 200-km long line delivered the current from the Kirgizia station to population centers and to the production sections of 20 large-scale cattle farms. Rural electric transmission lines whose overall extent in the republic already exceeds 50,000 km have insured a supply of cheap electric power to all kolkhozes and sovkhozes in this mountainous region. In recent years, the power available per worker in agriculture in Kirgizia has increased by a factor of eight. This has insured the stable increase of output in all types of cattle and farm production. When the Kurpsayskaya GES is brought up to its design output, the production of electric power in the 11th Five-Year Plan in Tyan'-Shan' will increase by one-third and will reach more than 11 billion kWh. More than one-half of this power will be utilized for the needs of agriculture. [Text] [Moscow TRUD in Russian 5 Dec 81 p 1] 9512

SECOND UNIT AT KURPSAYSKAYA GES--Kara-Kul', 31 dec--The commissioning of the second power unit at the Kurpsayskaya GES took place here in the republic's "power capital." The output of the unit which went on stream ahead of schedule is 200,000 kW. The first millions of kilowatt-hours of electric power have already been delivered to the Central Asian Unified Power System. In socialist competition for the right to start up the unit, victory was won by the Komsomol Youth Brigade of R. Kuluyev. The collectives of S. Fettayev, T. Usubaliyev, M. Sabirov, V. Troitskiy and others also distinguished themselves. [Text] [Moscow PRAVDA in Russian 1 Jan 82 p 2] 9512

POWER BRIDGE TO KUZBASS--Sayanogorsk--A 500-kV transmission line--a powerful new power bridge from the Sayano-Shushenskaya GES to the Kuzbass--is being laid across the Sayan and Kuznetskiy Alatau Ranges. The right-of-way passes through a complex mountain environment and is 400 kilometers long. Plans have been made to put the first circuit of this 500-kV line under load at the end of this year. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 27 Nov 81 p 1] 9512

SOLAR-POWERED RECHARGING STATION--Bikrova, 28 Nov--The first recharging station for the transport of the future--electric vehicles--was built in the republic reference laboratory of the All-Union Scientific Research Institute of Current Sources. The station receives energy from the sun. The charging installation consists of solar batteries and storage batteries. Converting light into electricity, the station accumulates energy for future use--in case of bad weather. All a driver has to do is connect his vehicle to the device for a few minutes. The charge will be enough on the average for a 100-km trip. Incidentally, a commercially produced electric car based on this principle has been in operation here already for a few months. [Text] [Moscow PRAVDA in Russian 29 Nov 81 p 6] 9512

HIGH-VOLTAGE LINE--Work is proceeding apace on the laying of a 1.15 million volt high-capacity line. It will connect power sources in Ekibastuz with enterprises in the Urals. Conductors are already being hung on many segments of this power bridge which is almost 1,500 km long. [Text] [Moscow PRAVDA in Russian 1 Dec 1 p 2] 9512

GAZALKENTSKAYA GES--Construction has been completed on the 120,000-kW Gazalkentskaya GES in Tashkent Oblast. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 47, Nov 81 p 5] 9512

MILLION-WATT GENERATING UNIT--Kiev--A generating unit of 1 million-kW capacity went on stream on 4 December at the Chernobyl'skaya AES imeni V. I. Lenin. This is already the third such unit at the station where the nuclear power industry in our republic had its start. "The Chernobyl'skiy 'million-watter' opens a five-year program for the introduction of units with increased individual outputs at nuclear power stations in the Ukraine," said Minister of Power and Electrification of the USSR A. N. Makukhin. The most powerful of the atomic generating units now produced in the country, they are also the most economical. In accordance with the resolutions of the 26th CPSU Congress, plans have also been made to use such units to equip the Southern Ukraine, Khmel'nitskaya, Zaporozhskaya, Crimean, Rovenskaya and Odessa atomic heat-and-power plants. In contrast to the channel-type reactors commissioned at the Chernobyl'skaya AES, the remaining stations will receive units of a different design--the so-called "water-cooled water-moderated" type. They possess a very compact core, are simpler to operate and are better mastered in world nuclear-power production practice. When they go on stream, the republic's fuel-and-power balance will improve considerably and tens of millions of tons of fossil fuel, the mining of which becomes more complicated with each passing year, will be conserved. Hundreds of labor collectives are taking part in creating the basis of the nuclear power industry in the republic. The largest orders are being filled by the Volgodon Atommash plant, turbine plants in Leningrad and Khar'kov and machine-construction enterprises in Kiev, Zaporozh'ye, Sumy and L'vov. [Text] [Kiev RABOCHAYA GAZETA in Russian 6 Dec 81 p 1] 9512

FIFTEEN-KILOMETER TUNNEL--Ordzhonikidze--The first meters of a 15-km diversion tunnel were drilled in the region of the line of the future dam for the Zaramagskaya GES. Along this mountain corridor the waters of the Ardon River will rush into a daily-regulation basin. The Zaramagskaya GES with its output of 374,000 kW is the first in the Ardon cascade. Builders will erect two more electric-power stations in the canyon. The overal output of this hydroelectric-power system will amount to 700,000 kW. This is eight times greater than the outputs of all GES's currently operating on the Terek River. [Text] [Moscow PRAVDA in Russian 29 Nov 81 p 1] 9512

COLOCATED VEHICLE PLANT AND GES--Naberezhyye Chelny, 30 Nov--The seventh generating unit of the Nizhnekamskaya GES, which will be erected alongside the Kama motor-vehicle plant, began producing commercial power. The complex of hydraulic structures under construction here is the largest on the Kama cascade. With the commissioning of the last turbines, the total output of this GES will reach 1.24 million kW. Work teams from the Spetsgidroenergomontazh trust led by G. Minnekhanov and P. Frolov as well as concrete workers and carpenters on the integrated team of Z. Yunusov from NizhnekamskGESstroy distinguished themselves during the construction of the seventh unit at the GES. The builders and installation workers committed themselves to commission one more--the eighth--unit at the station by the end of the first year of the five-year plan. [Text] [Moscow PRAVDA in Russian 1 Dec 81 p 1] 9512

CONSOLIDATED REGIONAL PRODUCTION BASE--Lesosibirsk-- A consolidated regional production base for the erection of a constellation of new hydroelectric stations on the northern reaches of the Yenisey and its tributaries is planned for construction near Lesosibirsk. The first in this cascade of hydroelectric stations--the Mid-Yenisey with its output of up to 7.6 million kW--will have 16 hydraulic generating units and will surpass the output of the largest station in our country, the Sayano-Shushenskaya GES. The new cascade of hydroelectric stations will also include the Osinovskaya, Podkamenno-Tunguskaya and Turkhanskaya GES's. The creation of a regional base for their construction will save no less than 350 million rubles. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 10 Nov 81 p 1] 9512

HIGH-OUTPUT UNIT--Ryazanskaya Oblast--Builders and installation workers of the Tsentroenergomontazh trust are working at an accelerated pace on the construction of the second "800,000-watter" at the Ryazanskaya GRES. These workers have committed themselves to commission the unit in December 1981. The installation of the primary and auxilliary equipment and pipelines is proceeding apace. [Text] [Tallinn SOVETSKAYA ESTONIYA in Russian 13 Nov 81 p 3] 9512

NEW SWITCHING GEAR--Solnechnodol'sk, 17 Dec--The seventh power unit of the Stavropol'skaya GRES--the largest power-generating enterprise of the northern Caucasus--has been put under load. Its output has now reached 2.1 million kW. The event took place on "B" shift's watch under the supervision of N. Polivanov. The start-up of the 300,000-kW unit was carried out by senior machinist N. Yenin. A new open switching facility for the 500-kV transmission line has been constructed on the site of the Stavropol'skaya GRES. The seventh 300,000-watter is connected to it, although it can transmit power simultaneously on the circuit designed for the other power units. The 500-kV transmission line will connect the power systems of the Stavropol'skiy and Krasnodarskiy krays. Passing over the summits of the Main Caucasus Range, it will link up with the Inguri GES. Then the Transcaucasus, the south and the country's central regions will be connected to the common power circuit. [Text] [Moscow PRAVDA in Russian 18 Dec 81 p 1] 9512

EARLY COMMISSIONING--Kuznetsovsk--The second power unit of the Rovenskaya AES was commissioned seven months ahead of schedule. Competition according to the principle of the "Working Relay" contributed to this in many ways. Thanks to the help of contractors, for example, work of unprecedented complexity was successfully executed by a collective from the Energovysotspetsstroy administration. Working far ahead of schedule, the workers erected a unique installation under complex weather conditions--a huge cooling tower which is capable of cooling 100,000 m of water in the course of one hour. The station's first unit, commissioned a year ago, has already generated about two billion kilowatt-hours of electric power. Taking into consideration the start-up of the second and third generating units, the Rovenskaya AES will provide the country's economy with several billion more kilowatt-hours of electric power by the end of the current five-year plan. [Text] [Moscow TRUD in Russian 27 Dec 81 p 1] 9512

NOVODNESTROVSK HYDROELECTRIC PLANT ON LINE--Novodnestrovsk, Chernovitskaya oblast', 24 Dec. A bright page has been written in the annals of the taming of the Dnestr. The first power unit, with capacity exceeding 100,000 kilowatts, produced power today at the hydroelectric plant under construction here. A second power unit is now being installed in the machine room, which is inside an 80-meter dam. When all of the units are brought on line, the capacity of the plant will be 700,000 kilowatts. The Dnestr, which caused considerable damage to fields and villages near its banks during the spring floods, has been put into the service of the economy. The reservoir which resulted from the overflow of the river will make it possible to irrigate about 500,000 hectares of land in the Ukraine and in Moldavia, and will improve the water supply of cities and villages in the region. [Text] [Kiev RABOCHAYA GAZETA in Russian 26 Dec 81 p 1] 6900

500-KV TRANSMISSION LINE IN CAUCASUS--The first LEP-500 [500 KV power transmission line] has been brought on line in the North Caucasus. It extends 200 kilometers from the Stavropol' GRES to the Tsentral'naya substation in the Apsheronskiy rayon in Krasnodarskiy kray. Industrial and agricultural enterprises have received additional power. The new LEP is the first section of a 500 kilovolt, transmission line which is under construction between Inguri-GES and the Stavropol' GRES. According to the plan, the LEP will extend to the Volgodonsk substation. [By V. Baybik] [Text] [Moscow, SOTSIALISTICHESKAYA INDUSTRIYA 18 Jan 82 p 1] 6900

POWER LINE IN TAYGA--Installers of the "Zapsibsel'elektroset'stroy" trust have put a power transmission line from the rayon center at Maslyanino to the village of Yegor'yevsk into operation. The line is short, covering slightly more than 30 kilometers, but it will provide a good service in providing reliable electric power for mining and agricultural enterprises in this densely forested mountainous corner of Novosibirskaya oblast'. Hundreds of high- and low-voltage transmission lines have been constructed in the Tayga within the year. [By A. Illarionov] [Text] [Moscow IZVESTIYA in Russian 19 Jan 82 p 1] 6900

BAYKAL-AMUR ALUMINUM DEPOSITS--Geologists in the Buryatskaya ASSR have begun preliminary exploration of the Mukhal'skoye nephaline syenite deposit in the area of the Baykal-Amur mainline. Technical tests and investigations by scientific institutes have confirmed that one of the three main deposits of aluminum ore has been discovered in the north Transbaykal. On the heels of the mainline of the century, construction of the Mokskaya hydroelectric plant is underway here on the

Vitima. Its power will support the processing of waste-free nepheline. [By A. Kleval] [Text] [Moscow IZVESTAYA in Russian 19 Jan 82 p 1] 6900

ELECTRIFICATION PROGRESS IN ARMENIA--An electric bridge carrying current of the Armenian AES [nuclear power plant] from the Nar-Gos substation to enterprises in Erevan was put into operation yesterday. A program for improving the structure of the fuel-energy balance is being successfully carried out in Armenia. A new stage in the electrification of the Republic has now arrived: standby transmission lines are being laid, and network circuits are being completed, which makes it possible to make power supply more reliable and stable. Many lines are being laid underground. [Text] [Moscow TRUD in Russian 16 Jan 82 p 1] 6900

NEW GENERATOR AT RYAZAN' PLANT--The next - sixth - power unit has been put on line at the Ryazan' GRES [state regional power plant] and has fed current into the Unified National Power System. The planners, builders and installers have fulfilled their obligations honorably. The new unit was installed in record time - just one year. The previous best effort, which was obtained in constructing a similar unit at the Zaporozh'ye GRES, was bettered by four months. The work was done on a sliding schedule, like in hot shops at a factory. One could not tell midnight from noon, or Sunday from weekdays, by the intensity of labor. Accumulated experience in combining construction and installations operations helped. Many subordinate organizations worked in a coordinated fashion, as a unified mechanism. "All of the best in the practice of creating powerful generating units", remarked N.A. Lopatin, Deputy Minister of Power Engineering and Electrification, who was present at the start, "is invested in the sixth unit at this plant. We shall be applying this experience in Siberia, mainly at the Kansko-Achinsk power complex. We shall be installing these same units in all of the plants which are to be built there". [By V. Kolobov] [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 8 Jan 82 p 1] 6900

NEW GENERATOR--The eighth generator at the Nizhnekamsk hydroelectric plant has been brought on line. [Text] [Moscow EKONOMICHESKAYA GAZETA No 3 Jan 82 p 3] 6900

NEW CENTRAL HEATING PLANT--A new high-capacity central heating plant has been brought on line in the Yakutsk miners' city of Neryungri. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 3, Jan 82 p 3] 6900

NEW GENERATOR ON LINE--The sixth power unit at the Primorskiy state regional power plant has been brought on line. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 3, Jan 82 p 3] 6900

TRANSFORMER PRODUCTION--Series production of new substations has begun at the Birobidzhan power transformer plant. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 3, Jan 82 p 3] 6900

FUELS

GAS-LIFT COMPRESSOR STATION INCREASES SURGUT OIL OUTPUT

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 3 Jan 82 p 1

[Article by Yu. Mashinov, engineer: "From the Depths by Gas 'Lift'"]

> [Text] The first gas-lift compressor station has been put into operation at the Fedorovskiy field.

The car rushes along the concrete slabs of the route laid through impassable swamps, rivers and taiga. Every now and then we encounter indefatigable rockers, electrical centrifugal pumps that feed oil from the depths of the earth to the surface. What of it, the wells will not gush forever.

But the pumps seem to be indefatigable only at first glance. They do not operate for more than a year under the most favorable conditions. At the Fedorovskiy field to which we are heading, it is less, 3 months. High formation pressure, unusual temperature in the depths, and a surplus of casing-head gas and harmful sulfurous compounds interfere.

The Tyumen' field workers have done a lot to use the casing-head oil gas, but part of it is still burned off. The Fedorovskiy field alone loses 3 million m^3 of this valuable natural raw material every day.

"There is only one way out," says the head of the fifth administration of the Order of Lenin Glavtyumenneftegazstroy, V. Lazarev, "the gas-lift method of oil extraction."

Its essence is that the gas is injected into the oil bed with the help of compressor station (CS) equipment. The gas bubbles, rushing upwards through the field well shaft, catch the oil with them. The gas seems to operate as a pump, increasing the bed output.

Electric lights blink cheerfully on the CS panel, instrument arrows shudder, and the machine with power of 12,500 MW hums rhythmically under the metal floorboards. The machine is unequalled. KS-1 will make it possible to increase the output of the bed by 2,000 T of oil per day without drilling additional wells. This is achieved with the help of a computer used for the first time in this type of station. The computer follows the operating regime of the assemblies and units, and regulates the gas feed through the gate valve.

Several kilometers from the main compressor station that was built by French and Soviet specialists in the framework of cooperation of the two countries, a second gas-lift CS is under construction. The brigade of carpenters and masons led by member of the Surgut party gorkom S. Karagodin is working here at high rates. Laying the concrete in foundation of the laboratory-general housing, the collective is 1.5-2-fold ahead of the shift assignmnet.

The dump trucks enter the construction site one after another. This site occupies an "island" of several tens of hectares in the taiga. The excavators rumble rhythmically, digging into the frozen ground. Many facilities, the framework of the main housing, boiler house, control blocks, are already in the state of readiness. They have passed in the production chain to the brigades of the installers headed by V. Lednev and Yu. Petelin.

Construction of CS-2 is going much faster than the first station. Even before the main construction crews arrived here, the site had been poured and the roads had been laid. Advance engineering preparation permits construction of facilities year round, improvement in production efficiency, and reduction in labor outlays by 20%.

Brickwork and assembly of buildings from heavy reinforced concrete structures are encountered less often today at the oil and gas construction sites of West Siberia. They are replaced by installation of enlarged blocks of plant fabrication. For example, the administration housing of KS-2 was assembled in only 2 weeks, while this same work took 3 months in the first station. The construction rates have been accelerated because the association "Sibkomplektmontazh" supplies sections in which the ventilation, sanitary-engineering and electrical equipment have been installed under plant conditions. At the same time, extensive use is made of light-weight designs made of aluminum panels. This permitted a 5-fold reduction in the weight of the buildings, and a 2-fold reduction in labor outlays.

The advanced mechanized method of oil extraction will help the oil workers of the Fedorovskiy field to fulfill their high socialist commitments faster: extract 100,000 T of oil per day. This is a worthy contribution of the collective of the "Fedorovskneft'" administration to achieving the daily average extraction of a million tons of Tyumen' oil.

9035
CSO: 1822/63

PAVLODAR OIL REFINERY COMMITMENTS REVEALED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 12 Jan 82 p 1

[Article: "With Efficiency and Quality"]

[Text] These are the socialist commitments of the collective of the Pavlodar oil refinery for 1982 and the 11th Five-Year Plan as a whole.

Implementing the historic decisions of the 26th CPSU Congress, the collective of the Pavlodar oil refinery fulfilled the planned assignments and socialist commitments of the first year of the 11th Five-Year Plan ahead of schedule. Assignments have been overfulfilled on the generation and realization of oil products, for the output of products with the state sign of quality and for the production of consumer goods. The planned rates of increase in the volume of production were exceeded by 2.5 percent.

The plant workers are full of decisiveness to preserve the labor initiative, and after widely expanding socialist competition under the motto:"Work with Efficiency and Quality," they are obliged to achieve a labor productivity growth in 1982 of 4.2 percent, at the same time exceeding the planned assignment. The entire increase in the volume of production will be guaranteed without increasing the number of workers. They are obliged to reduce the net cost of products versus the level stipulated by the assignment, and to produce an additional R 100,000 of profit. They are committed to reducing the outlays of fuel, heat and electricity in a volume to guarantee the operation of the plant on the conserved resources for 4.5 days. A total of R 600,000 of saving will be gained from introducing and using the efficiency experts' suggestions and inventions.

They are obliged to utilize the improvement in production processes, more efficient use of facilities, improvement in the organization of production and quality of work, and all-possible conservation of labor and material resources in order to complete the annual plan for the 11th Five-Year Plan for production and realization of products ahead of schedule. They are committed to fulfilling the 11th Five-Year Plan as a whole with an advance of 10-15 days. In 1982 they will produce additional products totalling R 600,000 and will generate above the plan 2,000 T of automobile gasoline, 5,000 T of diesel fuel, 200 T of compressed gases and a considerable quantity of other petroleum products. They are obliged to provide products to all consumers smoothly and on time. They will manufacture 57 percent of the products with the state sign of quality.

They will continue work to implement the plans for socioeconomic development of the plant collective. The workers will introduce 9,000 m^2 of housing and build a 320-seat kindergarten in order to improve the housing and social-general conditions of the workers.

They will strengthen culinary help to the village workers by fulfilling the plan for supply of petroleum products to agriculture ahead of schedule. They are obliged to build a cow barn within the auxiliary farm of the plant for 200 head.

The plant workers call upon the collectives of the enterprises of the oil refining and petrochemical industry in the country to be actively included in socialist competition for further improvement in the efficiency and quality of work, to turn 1982 into the year of intensive Leninist labor, and for a worthy meeting of the 60th anniversary of the formation of the USSR. They assure the Leninist CPSU Central Committee, the Politburo and Comrade L. I. Brezhnev personally that they will fulfill their commitments with honor and will make a worthy contribution to implementing the great tasks of the 11th Five-Year Plan.

The commitments were discussed and adopted at a general meeting of the plant collective.

9035
CSO: 1822/100

UРЕНGOY-NOVOPSKOV GAS PIPELINE CONSTRUCTION BEGINS

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 16 Jan 82 p 1

[Article: "Start of the Gas Main"]

[Text] Construction of the Urengoy-Novopskov gas pipeline has begun. Over 30 billion m^3 of gas will travel on it every year.

A TASS correspondent set out from Tyumen' together with the head of the Glavsibtruboprovodstroy N. Kurbatov to the source of the gas river, the Urengoy field. Here new wells are already being drilled and another two units of the comprehensive raw material preparation are being constructed. Each of them will be able to supply over 40 million m^3 of gas to the pipeline daily.

"The short amount of time for construction of the main," N. Kurbatov said, "dictated the accelerated working rates. For example, it took weeks to move people, equipment and cafeterias just a short while ago. Now it takes days. This is not in a city where you move from apartment to apartment. We have been helped by the already accumulated experience and thorough engineering preparation."

The brigade of installers of USSR State Prize laureate B. Diduk is working on one of the main sections of the route. The earth shudders under the caterpillar tracks of the multiton cranes sent to assemble the pipe sections. The welders are set up where the pipes connect to the mainline. Two of the welders, stand on ladders (the pipe diameter is almost 1.5 meters), two are lying on their backs welding the first root seam. Then their place is taken by another three "quartets" who apply the filling layers of metal and make the seam facing.

Boris Pavlovich Diduk has built many pipelines, and he considers this line-separated method of welding to be the most efficient. It is like a conveyer where each worker specializes in fulfilling a definite operation. This makes it possible to achieve high strength of the connections, which is especially important. They must withstand gas pressure of 75 atmospheres. Each welded seam is therefore x-rayed.

In the current construction season, the brigade of B. Diduk has decided to weld 150 km of pipe into a line. No one in the sector has yet to achieve such a high result. The bold move of the welders has forced the subcontractors to keep up. They prepare the bed for the pipeline and deliver the pipe sections. Now the work of any brigade here is assessed by the collective that goes along behind the production line. If the brigade lets them down, they cannot count on a prize-winning place in the competition.

In the Nadym region, the builders have encountered a column of new pipelayers made in Sterlitamak. The Bashkir machine builders for the first time in the country have started to manufacture domestic pipelayers. They previously had to be purchased abroad. Experimental samples have been created in Sterlitamak, and the Tyumen' workers have tested them. The joint search was successful and series production of the machines has been developed.

The obtained equipment will help the builders not to reduce the rates. Certain pipelayers need repair after working on the Urengoy-Petrovsk gas pipeline route that was finished last year. It would be an irrevocable loss to lose even a day now. The construction season in the Tyumen' north is restricted to winter when the swamps are frozen and passable.

The Tyumen' segment of the new gas main is 850 km long. The Siberian workers have decided to lay it a month earlier than stipulated by the plan.

9035
CSO: 1822/100

AUTOMATIC PIPE WELDER SHORTENS WORK TIME

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 5 Feb 82 p 1

[Article by Yu. Belanov, our in-house correspondent: "'Sever' Can Do Everything"]

[Text] Anyone who has been to the route of the gas pipeline under construction even once knows that welding the junctions of large-diameter pipes requires not only the highest jewelry skill, but is also very labor-intensive. It normally takes more than one shift for the welder to weld one joint. Although the best welders of Glavsibtruboprovodstroy significantly outdo these standards, the brigade reserves are limited. As Comrade L. I. Brezhnev stressed in his speech at the November (1981) Plenum of the CPSU Central Committee, it remains in this five-year plan to continue five of the largest gas pipelines of West Siberia-center of the country, as well as the export gas pipeline Urengoy-Uzhgorod. The length of these underground mains is many thousands of kilometers, and consequently, it is necessary to weld tens of thousands of high-quality joints. This enormous volume of work can only be fulfilled with good quality and in time with the help of highly productive equipment.

The set of electric-contact welding "Sever-1" has become such a reliable assistant to the pipeline builders. It was developed by the Kiev scientists from the Paton Institute. The set consists of a welding head, power plant, diesel unit with output of a thousand kW. The set includes a trimming unit, outer flash-remover (flash is hardened metal that is extruded during welding in the joint zone), heavy pipelayer with lifting capacity of over 90 T, and another 2 which are lighter.

Everything is ready for welding the large diameter pipes into one line on racks. Foreman-operator V. Gavrichenkov presses a knob on the mobile control panel, and the cigar-shaped welding head emerges halfway out of the pipe. Another pipe advances to meet it. As soon as they are in close contact, one of the most important operations of automatic welding begins: centering of the joint.

"Everyone to their places! Welding!"

Now the operator is already behind the central control panel located in the cab of the machine. He presses the button "Start!" Voltage is fed to the welding transformer of the head, and the self-recorder is automatically turned on. This is the chief instrument which controls the quality of the welding. The command electrical instrument KEP is also turned on. It operates on an assigned program.

Even if a so-called "sticking," short-circuit occurs, the automatic machine itself will be able to eliminate the malfunction. It remains for the operator to attentively watch the readings of all the instruments.

On the rack, on the joint of the two pipes of almost 1.5 meters in diameter, a scarlet seam is already clearly designated. It burns even brighter, a shower of incandescent sparks is carried higher by the wind. It is impossible to take your eyes off the fire ring that has encompassed the pipe. It is beautiful!

Now the command electrical instrument itself turns off the automatic unit and the sparks are immediately extinguished. The incandescent seam which has firmly connected the two pipes has started to get dim.

I look at my watch, welding of one joint took exactly 4 minutes. The welder would do this work manually in 8-10 hours.

"Our 'Sever-1' has not yet reached rated output," says the chief engineer of the trust "Urengoytruboprovodstroy" I. Morozov. "It still has vulnerable places. But the already attained results indicate that this automatic unit has enormous potentialities."

Yes, one can now state with confidence that "Sever-1" can do everything. Today the two automatic sets of electric-contact welding that the subdivisions of Glavsibtruvoprovodstroy have are successfully operating on the next start-up facility of the five-year plan, the construction of the Urengoy-Novopskov gas pipeline.

9035
CSO: 1822/100

UDC: 016: 622(031)

REVIEW OF ENCYCLOPEDIA FOR MINING ENGINEERS

Moscow RAZVEDKA I OKHRANA NEDR in Russian No 11, Nov 81 pp 61-63

[Article by L. M. Geyman ("Soviet Encyclopedia" Publishing House): "Encyclopedia for Mining Engineers"]

[Text] A general-purpose "Gornaya Entsiklopediya" [Mining Encyclopedia], in 4 volumes, is about to be published. This encyclopedia is intended for mining engineers of all areas of specialization, including mining engineer-geologists. The editorial board is exercising general scientific supervision of publication of this encyclopedia. Prof Ye. A. Kozlovskiy, USSR minister of geology, serves as chief editor. Each article in this encyclopedia is a small, self-contained scholarly work with a rigorously determined structure and mandatory interlink with related, more general or more detailed articles. This enables the reader, if he has the need, to deepen his knowledge on a given subject, to concretize that knowledge or to obtain information on a broader level in a generalizing and synthesizing article. In the final analysis the four volumes of this encyclopedia will constitute a unique information system balanced by subject matter and significance criteria.

For example, references to an article on a specific mineral deposit may be contained in articles on the continent and country in which it is located, on the corresponding branch of industry, commercial mineral, and genetic type of mineral deposit. The article dealing with such a deposit may in turn contain reference to the basin in which it is located.

Work has been completed on preparation of the first volume. Approximately 2500 specialists have participated in this volume as authors and reviewers. The scientific quality of the articles is checked by 70 scientific editor-consultants from the ranks of the top scientists in various areas of geology and mining engineering. The first volume contains more than 1500 articles, covering the first four letters of the alphabet. Thematic articles include a number of major and problem articles -- "Geological Sciences," "Mining," "Geological Prospecting and Exploration," "Mining Industry," "Mining Education," "Geochemistry," etc. Three major articles deal with continents -- Australia, Asia, and Africa, their geologic structure, mineral resources, and mining industry. Articles on specific countries include materials dealing with Great Britain, Brazil, Algeria, Bulgaria, Hungary, Vietnam, the GDR, and three articles on union republics: the Azerbaijan, Armenian, and Belorussian SSR. Articles on socialist countries were prepared by specialists from these countries and are distinguished by breadth and detail. In addition to general information and the structure of their economy, these articles contain concise information on topography, climate, and hydrogeology. They provide detailed descriptions of geologic structure, mineral resources and the history of their exploitation from ancient times, mining industry, organization of mining-geological survey, training of personnel, and the periodical press. Most of the information of this type is being published for the first time in Soviet literature. The above-listed articles are the largest in length, some totaling 1.5-2 author's sheets. The "Mining Encyclopedia" will contain materials on almost 100 different countries with a developed mining industry or possessing substantial mineral resources.

Considerable attention has been focused on genetic types of deposits and mineral resources. Materials on commercial minerals are supplemented by detailed articles on corresponding minerals, chemical elements, and branches of industry. Utilizing references to related articles, the reader will be able to gain an idea on the genetic features, material composition, resources, scale of production, economic significance and conditions on the world market for a given mineral raw material. Articles on rock types are of a combined nature, as different rocks are examined not only from a geological standpoint but also as valuable types of non-ore minerals. The encyclopedia contains articles on the geologic structure and history of the discovery and development of large regions. The first volume, for example, contains an article on the Altai. Considerable attention is devoted to historically well-known basins, provinces, ore regions, and individual deposits -- the Volga-Ural oil and gas province, Witwatersrand, the Great Dike, the East African Phosphorite Basin, etc. The first volume alone contains almost 200 such articles, the most important of which are accompanied by maps and geologic sections.

Articles in the first volume deal with mining and geological institutes, large organizations, such as the Mining Department and Geological Committee, mining enterprises, international gas, mining, oil, geological and other congresses, journals, etc. Of definite interest for the general reader are the profusely illustrated articles entitled "Volcanoes," "Diamond," "USSR Diamond Resources," as well as articles on individual precious, semiprecious and decorative stones. The article "USSR State Prize" contains the first compiled list of all works in the area of mineral resources development and exploitation receiving this coveted award in 1944-1981, listing the names of the prize winners. It is planned to include in the encyclopedia approximately 500 biographies of eminent Soviet and foreign mining engineers and geologists, as well as organizers of the Soviet mining industry. In the first volume the reader will find articles on V. I. Vernadskiy, D. S. Belyankin, Yu. A. Bilibin, V. I. Vakhrushev, N. K. Baybakov, and B. F. Bratchenko.

A considerable volume of material informs the reader on methods of mineral prospecting and exploration, technology of mining and primary processing, raw minerals, utilization of mineral raw materials in the nation's economy, safety procedures, and environmental protection. Acquaintance with these matters will enable the mining engineer to gain better knowledge of related areas of specialization and will help him precisely gain his bearings in boundary areas of knowledge. One of the specific features of the "Mining Encyclopedia" lies in the fact that each and every term is accompanied by foreign counterpart terms -- English, German, French, and Spanish. This lays the groundwork for an international standard in the area of mining and geological terminology.

A great deal of attention is devoted to illustrative materials. The first volume contains approximately 100 multicolored maps. The most complicated of these -- tectonic maps of continents -- employ a common legend. In addition, for each continent there are maps showing location of commercial minerals, as well as mining-economic maps which indicate as percentages the scale of production of the most important mineral raw materials. Appended to articles on countries and union republics are mining industry maps, which employ for the first time newly developed symbols. Articles on the major commercial minerals are accompanied by maps of the world, on the synthesized tectonic foundation of which are indicated the largest mineral deposits and basins, with indication of their genesis. A common key is employed in preparing maps for individual large commercial mineral basins, regions, and oceans. Efforts have been made to standardize illustration of the encyclopedia articles. Toward this end a system of modules has been developed, in conformity with each of which a large series of uniform illustrations will be prepared in a uniform manner. Multicolored illustrations are provided on the principal types of machinery, mineral specimens will be photographed on a special photographic enlarging unit with 10-50 x magnification, and articles on countries, mining enterprises and regions will contain color photographs with a general view of mining industry installations.

The most important problem for this encyclopedia is completeness of terminological coverage of the immense scientific-practical field of development and exploitation of mineral resources. With this objective in mind, the "Sovetskaya Entsiklopediya" Publishing House has been working for the last five years on going through the principal mining-geological literature, both journals and books, as a result of which a card index of terms has been collected, and is being added to monthly, an index which contains approximately 15,000 item designations and more than 300,000 units of applicable factual information. This card index has made it possible to include in the first volume alone more than 200 new terms not included in the glossary ratified in 1979, has significantly enriched the bibliography at the end of each article, and has deepened the content of the articles. Reader suggestions, which are considered in preparing a given article, are also placed in the card file. The editorial board would like to thank in advance those readers who submit to the "Mining Encyclopedia" textual or illustrative materials which in their view are of interest. Our address is: Moscow, Pokrovskiy Ul., 8, Izdatel'stvo "Sovetskaya Entsiklopediya," Redaktsiya "Geologiya i Gornoye Delo."

COPYRIGHT: Izdatel'stvo "Nedra" "Razvedka i okhrana nedr", 1981

3024
CSO: 1822/90

OIL DISCOVERED IN YAKUTSKAYA ASSR

Moscow PRAVDA in Russian 9 Dec 81 p 6

[Article by V. Nikolayev, correspondent of the newspaper SOTSIALISTICHESKAYA YAKUTIYA: "Through the Permafrost"]

> [Text] Oil, the first in the northeast part of the country, gushed from a well which had been drilled through the mass of permafrost on the Botuobinskiy field, from a depth of 1,900 m. Its influx has industrial importance. Laboratory analysis has shown that its quality is not inferior to the oil that was discovered in the Volga-Ural province.

The scientists long ago confidently predicted reserves of "black gold" in the frigid depths of Yakutiya, and even indicated the hypothetical sites of its occurrence. But it proved very difficult to drill through to the oil. The regions studied by the Srednelenskiy expedition have an extremely complicated geological structure that does not fit into customary concepts. Technological solution was initially continually absorbed during the drilling. The rate of drilling was therefore insignificant and the tool rapidly wore out. The sharp minds of the specialists from the association "Lenaneftegazgeologiya" and the scientists of the East Siberian Scientific Research Institute of Geology, Geophysics and Mineral Raw Materials came to the rescue. Working together they created an original formula for an effective, so-called "light-weight" washing fluid.

This is why it was necessary to abandon the previously employed standard water. Oil has the property to form stable aqueous emulsions. When the productive bed is opened and tested, they are capable of significantly distorting the information obtained from the depths. These emulsions can also interfere with the emergence of the gusher to the surface.

The scientists succeeded in designing an instrument to determine the electric stability of the washing fluid. By using it, the geologists controlled their work. If deviations from the assigned parameters developed, corrections were made quickly.

Foreman Vyacheslav Popov began the drilling. He was able to assign a high production rhythm. The brigade was then headed by the experienced specialist Leonid Kuz'min. He brought the well to the planned mark. The tests began.

Holes were drilled at a definite depth in the wall of the operational column that was lowered into the well. The testers, "looking" into the depths, clarified what was there: empty rock, ore, gas, oil? The sampled segment was filled with cement, and "examination" of another level began. The brigade of foreman Anatoliy Kosarevich accurately "located" the productive bed. And the gusher rushed out.

Test operation of the well has been set up. Operating in different modes, it yields a stable daily output. The oil is now used in thermal boilers instead of imported solar oil.

9035
CSO: 1822/61

FUELS

INSPECTORS CALL FOR BETTER INVENTORY OF MATERIALS,EQUIPMENT

Moscow EKONOMICHESKAYA GAZETA in Russian No 52, Dec 81 p 20

[Article by I. Nikitin, chairman of Berezovo regional committee of people's inspectors: "Measures against 'Forgetfullness'"]

[Text] Our Berezovskiy rayon is not only the birthplace of the first Siberian gas gusher. Today it can be called the gates through which the West Siberian gas travels on several main pipelines to the Urals and the central part of the country. The creation of new streams of the hydrocarbon raw material is one of the chief tasks for the rayon workers. This year alone, hundreds of kilometers of main gas pipelines and the Krasnoleninskiy arch-Shaim oil pipeline, six new lines to compressor stations, and no less than 28,000 m^2 of housing will be built for a total of R 4 billion.

Concern for effective and efficient use of materials and the timely start-up of facilities has become primary in the activity of the rayon people's inspectors. For example, in examining the list of the people's inspection group of the Kazymskiy Line-Production Administration of Main Gas Pipelines regarding the low quality of work done by the Uray house building kombinat on housing facilities in the Beloyarskiy settlement, the committee decisively supported the suggestions of the group and strictly punished those directly responsible. An intermediate check indicated that the quality of housing construction had significantly improved.

The people's inspectors of the trust "Priob'truboprovodstroy" made specific suggestions on how to better organize labor for construction of a loop (additional line) on the Punga-Ukhta gas pipeline. The adopted measures allowed timely completion of the facility, its testing and start-up.

We consider the imposition of order in the preservation and efficient use of large diameter pipes in the construction of gas pipelines to be a good achievement of the people's inspection agencies. There were many of these pipes lying along the routes under the snow and in the swamps not too long ago. The first check made by the inspectors on the 600-kilometer route of the 5 operating lines of the Nadym-Punga-Ukhta gas pipeline revealed 17 kilometers of pipes "forgotten" by the builders, costing over R 3.5 million.

The leaders of the construction and installation and specialized administrations (Comrades Fastovskiy, Moroz, Kartashov, Gorst) of the trust "Priob'truboprovodstroy" (manager Comrade Sukharev, chief engineer Comrade Moiseyenko) have promised for 2 months to remove the pipes to a storage site and to new routes. However, a second check demonstrated that they did not keep their word. Only after some of them had been held administratively responsible and monetary deficits had been made, did the situation change. As a result of subsequent checks in which we were well aided by the oblast and union committees, order was successfully instilled in the preservation of expensive pipes. But we cannot consider the work to be finished, for we have not succesfully eradicated the habit of "forgetting" materials and even equipment on the route after its construction has ended.

The people's inspectors are also concerned about facts of poor management regarding expensive insulation film and wrappers, railroad overloads which also often remain along the route.

In order to activate the groups of people's inspectors in the construction organizations, the rayon committee painstakingly works with their chairmen. They get on-the-job training in the rayon committee and in the base groups of people's inspectors. During this time they become familiar with the best experience, master in practice the most efficient methods and forms of inspection, and set up contacts with active members not on the staff. However, life requires that we further perfect the organization of our work. In particular, the time has come to unite efforts with the inspectors of the neighboring regions where trust subdivisions are working that were dislocated in our region.

It is common knowledge that the people of Tyumen' have set the goal of early attainment of the level of extracting 1 million T of oil and 1 billion m^3 of gas per day. The people's inspectors are helping to achieve this with the minimum expenditures.

9035
CSO: 1822/63

SIAZAN' OIL WORKERS AIR COMPLAINTS

Baku VYSHKA in Russian 14 Nov 81 p 2

[Article by O. Nechipurenko: "In the Piedmont of the Great Caucasus"]

[Excerpts] Are All the Reasons Objective

The Siazan' oil prospectors were in a difficult position this year. Strong rains that passed in early spring caused slides that paralyzed the work of the oilmen and the drillers on a large section for a long time.

They therefore had to drill wells not at the points marked in the original plan, but wherever it was possible, and mainly producer wells. This is the main explanation in "Azneft'" and in the UBR [drilling administration] for the lag in exploratory drilling that was permitted this year. Whereas the assignment for drilling development wells was fulfilled by slightly more than half and over 3,000 m of rock were not drilled, in three quarters of the first year of the 11th Five-Year Plan the commercial rate of drilling development wells exceeded the planned by almost 1.5-fold and was 560 m per machine per month. Construction was completed and eight wells produced oil instead of the planned seven.

The drillers are also trying to compensate for the omissions in exploration of the depths.

Our GAZ car from the rolled track rises on a steep elevation towards development borehole No 1253 on the Amirkhanly field. It is being drilled by the brigade of K. Mamedov. The ground samples taken from this well from a depth of 1,700 m were saturated to the limit with oil. This confirmed the correct selection by the geologists of the location of this well. The watches of the drillers M. Nadkafov, G. Guseynov and A. Gadzhiyev are now doing everything possible to finish it rapidly and with good quality. The solution has been treated with chemical agents and the drilling is being done strictly according to the assigned mode-production chart of parameters. The brigade will soon finish the fourth well this year, and three of them have been drilled in the geologically complicated region of the Zagly-Zeyva field where strong absorption of the wash liquid is observed in the upper intervals.

However, the situation is not so favorable in all the collectives of oil prospectors. Take well No 26 on the Talabi field, for example. It is located in Kuba. There were no elemental misfortunes here. This region is very promising.

Previously drilled well No 12 yielded oil. There have been moments during the drilling of No 26 when "black gold" flowed in a river through the chutes. Nevertheless, this borehole has been standing for a long time already. There are no bits that could be used to continue the drilling of the well in strong rocks at a depth of about 4,500 meters.

"If this were the only problem," foreman Z. Mamedov sighs distressfully. "Our drilling tool is combined and consists of pipes of different diameters. The majority of them are old, and the well shaft is very complicated by constrictions so that we are waiting for an accident every minute."

The UBR unfortunately is not yet using drilling with the help of foam. Its introduction is stipulated by "Azneft'" measures for the third quarter of the year and could guarantee rapid and high-quality drilling of the upper absorbing intervals of the well on the Zagly-Zeyva field. Moreover, as the oilmen told me, sometimes the outdated method of drilling without circulation escape is used here. In this method, in particular, the revealed productive levels are plugged up with drilled rock.

"Or take another situation," adds the head of the geological section of the UBR K. Kerimov. "The drillers are often blamed: they say that they do not want to take rock samples because this has a poor effect on the drilling rate. What are we to do if we do not have the drilling heads for this? And we do not always know what to do with the ground we lift up from the depths. The rock samples from the 26th, for example, had been in the Institute of Geology of the republic Academy of Sciences for over 3 months. And then they were returned to us because the institute did not have a polisher."

The effectiveness of the geological study of the promising oil and gas regions of the piedmont of the Great Caucasus is also reduced by many other factors, for example, unreliability of the formation testing equipment, or rather, one of their parts, the packer which is made at the Baku plant of rubber-technical items. The drilling tool has to make dozens of empty runs into the well before the promising formation is successfully and reliable sealed and a flow of fuel comes from it.

We encountered another difficult situation at development well No 1173 in the Zagly-Zeyva field which is being drilled by the brigade of foreman A. Gamidov. The collective has lost over 3 months this year in eliminating the geological complication and waiting for the intermediate casing column. They nevertheless were able to compensate for the omission. The well is being drilled 1.5 months ahead of schedule. But precisely now when the oil-saturated rock samples have been lifted from the depths, and it was decided to test the well for productivity, a new complication arose, the producer casing column. It is not a problem of not having it, it is simply a problem of how to get it to the borehole because there are not enough pipe trucks in good working condition.

Oh, the Roads

This is not the first time we have written about the lack of roads in the mining field of Zagly-Zeyva. But we have to return to this problem once again.

It has already been noted above that spring and summer were rainy here. It was necessary to immediately restore a section of the road that had suffered especially in the bad weather. Of course the fourth DSU [road construction administration] of the trust "Azneftedorstroyremont" had its own difficulties in repairing it.

"The Divichi garage let us down," complained the head of the road construction administration M. Nurmamedov. "Old trucks were allocated for hauling the gravel that were not adapted for working under mountain conditions."

But after alarming letters began to arrive in the trust from the oilmen, noting in particular the low quality of the new road paving, the situation sort of improved. The administration for mechanization of construction commandeered for Zagly-Zeyva drivers of the heavy trucks "Tatra" and the repair of the road was finished. It is true, that it was not finished when they had assumed, but half a month later. All the time that this work was underway, not a drop of rain fell in the mountains, but as soon as the repair was complete, it poured. Not especially long, but strong, and turned the repaired 5-kilometer section of the main road into a muddy mess no less than 0.5 m deep. We traversed it together with M. Nurmamedov in deathly silence. There was nothing to say. The fact is that the material to cover the road was taken close by in order to speed up the work, knowing what this could result in, although higher quality gravel could have been taken from the bed of the Gil'gil'chay River.

In a word, chasing after quantitative indicators with a formal attitude towards the work, there was a sad outcome. It was necessary to redo the work that had already been done. This is the situation at the main transportation artery of the mountain oil field.

The situation is no better with the approaches to the development wells, for example, the new one, No 1205. The plan stipulates over 20 cm layer of gravel on these roads, and in fact there are not even 10. After the well has been drilled, the approach roads to it become ownerless since according to the active statute they are not basic resources and are not transferred from balance to balance of the enterprises. This means that they are not repaired. We must find out now who is to blame for the fact that in front of our very eyes the tractor hoist driven by machine operator G. Mamedov from the brigade of the foreman of underground well repair of the NGDU "Siazanneft'" M. Kuliyev unsuccessfully tried with the help of two tow trucks to climb up onto the road leading to the high-output well No 1196.

Why Are the Houses Empty?

It is difficult to get to Zagly-Zeyva. A lot of time is spent on the road which cannot help but affect labor productivity of the drillers. The question is raised of why the drillers do not switch to the watch system of working instead of a 12-hour work day so that several hours a day are not lost on travelling? This is also wise because two spacious sleeping structures designed for 22 people each were built 3 years ago in Zagly-Zeyva. Now they are empty. "The workers do not want to live there," the leaders of the UBR told me.

Why?

"Where are we to eat?" the drillers of the brigade of A. Gamidov answered the question with a question.

In fact the operation of the cafeteria of the Siazan' rayon mixed trade is being preserved only by the enthusiasm of the head Z. Kutukova and her young assistants N. Ordukhanova and A. Kadymova.

"I have to persuade the drivers of the trucks for the watch almost every day to take me to the cafeteria with a load of products," Z. Kutukova relates.

And the actual living areas can hardly be used. No heating is operating in the houses, although A. Guvvetov, deputy head of the NGDU "Siazanneft'" which manages them, convinced me of the opposite.

The fact is that water entered the autonomous system of steam heating in this building last winter. Then it froze and broke the radiators. Since then the corridor of the building has been heated by two small iron stoves that the gas line was connected to.

A vicious circle has generally resulted. The workers do not want to switch to the watch method mainly because the necessary conditions have not been created for this. And the conditions are not being created because the workers themselves supposedly do not want it.

9035
CSO: 1822/61

FUELS

PROBLEMS, PROGRESS OF ARTEM OIL FIELD OUTLINED

Baku VYSHKA in Russian 5 Dec 81 p 2

[Article by surprise inspection brigade of VYSHKA: I. Golovina, operator of the pumping shop, Z. Tomarov, foreman, S. Bagdiyan, engineer, V. Gol'tsev, correspondent of VYSHKA: "Reserves of Oil Fields"]

[Text] Oil and gas has been extracted for over a dozen years on Artem Island and its water areas. The old field fund which is in the class of an exhausted deposit, and the Caspian with its squall winds created many difficulties in the work of the collective of the NGDU [oil and gas drilling administration] "Artemneftegaz." But the offshore oil workers, based on their accumulated experience, knowledge and skill are finding more new reserves of oil extraction. It is precisely the available potentialities which will be used to extract 3,000 T of oil and 3 million m^3 of gas above the plan in the first year of the 11th Five-Year Plan.

How are the commitments being fulfilled?

"In 11 months of the year," says the chairman of the group committee of the NGDU trade union, G. Akhmedov, "about 2,000 T of oil and almost 4 million m^3 of gas have been extracted in addition to the plan. This is the result of the creative efforts of the workers and the engineering-technical workers in the socialist cooperation for increased efficiency of production and quality of labor."

Last year, in the remotest section of the second shop for extraction of oil and gas, the Apsheron bank, seven wells were drilled from a separate offshore base. However, because of the low formation pressure, it was not possible to make the maximum use of their extraction potentialities. In order to revive the operation of the wells, it was decided to connect an air line to the base and switch the boreholes to the compressor method of operation. This work cost a lot of effort: the pipeline had to be stretched along the sea bottom from the Darvin bank, 16 kilometers from the base. But the oil workers successfully coped with the task. The current total daily output of the wells has risen 2.5-fold, and is about 50 T of oil.

Another problem has also been solved efficiently. The oil extracted on the Apsheron bank was collected in intermediate tanks located on base No 17, and then pumped to the shore. Servicing this section was a lot of trouble since it was not possible to change the shift in bad weather. Now the fuel is pumped from the tank with the help of remote control instruments that were installed at the suggestion of the electrical engineer V. Lipin at base No 11 where operators are on constant duty.

"We have many other reserves of oil extraction," notes the head of the shop Dzh. Zeynalov. "This year, for example, we started to switch the low-output compressor stations to deep-pump operation. Thirteen wells have already been equipped with with rockers. As a result, their output has risen by 15 T, and the conservation of compressed air is 30,000 m^3 per day. Before the end of the year we are counting on switching another two wells to deep pumps.

Our current concern is to increase the output of 24 wells which are located on five other distant platforms. It is also necessary to switch them to the deep-pump method of operation. But the work is being held up because the section has not yet been electrified, and laying of the cables has only just begun. The construction-installation work should be done more energetically: for the fulfillment of the plan must guarantee an increase in the daily extraction of at least 25-30 T of fuel. This addition is very significant for the old field."

The head of the shop told us about the testing which the collective underwent on one of the stormy November days. A strong wind damaged the underwater cable, many wells stopped, and a lot of effort was required to eliminate the damage and start up the rockers. The brigades of foremen Konstantin Minyayev, Akhmed Babayev, and Viktor Tukhnenko were excellent workers. The other day, for example, wells No 247 and 419 went into operation after repair. The first is now pumping 7-8 T of oil, and the second, 6.

The collective of the second shop for extraction of oil and gas is working laboriously on the well fund. The planned volume of measures is being implemented here. However, the desired effect is not achieved in all cases. This is indicated by the fact that in the third quarter of this year, the plan for oil extraction by the oil workers was fulfilled by exactly 100%. Not a single ton of oil for the adopted commitments came in in November, although the potentialities of the oil bed have far from been exhausted. What is the matter?

The senior geologist of the shop V Petrushev relates: "The degree of water flooding of the wells has recently increased. The water penetrates becuase of defects in the operational columns. Wells No 593, 597 and 590 have decreased their outputs from 4-4.5 T of oil to 100 kg per day. It is not easy to compensate for these losses."

In order to combat the water, the oil workers have started to lower so-called water-insulating columns. The first results have been positive. The innovation helped, for example, to start up well Nos 271, 546 and 185. The last of them is being devloped, and the two others are currently being operated with average output of 3.5-4 T of oil per day.

There are many wells here that need "renewal." However, the brigades of major repair are not coping with the entire volume of work. A similar situation has formed at other fields. The repair operations generally are prolonged. In 10 months, 22 wells have been reactivated, 5 less than planned.

One of the reasons is the poor technical equipping of the brigades that are engaged in complicated work. The old machines "MK-3" as well as the units for underground well repair became worthless long ago and often malfunction. The brigade of foreman A. Babirov had to cut deeper and drill a second shaft in well No 749. However, it could not start work because of the worthless machine. Senior foreman R. Gyandzhaliyev was forced to transfer the repairmen to another well. On the eve of our arrival, a stoppage occurred in well No 59. The mechanics were working all day to repair the hoist, but were not able to actuate it. The brigade of foreman S. Medzhidov thus was idle for the whole shift.

One can cite many of these examples. In the 10 months of this year alone, there were over 7,000 hours of organizational idle time in the major repair shop. Of the 15 brigades, only 7 coped with the fulfillment of the plan and the adopted commitments. How many wells could have been repaired in this time!

Definite calculations for an additional increase in oil in the NGDU are linked to thermal methods of modifying the deposit. The administrattion is taking measures to expand the scales of use of the method of intrabed combustion. The bed was set fire to recently in the first field in former water-injection well No 464. This revived the operation of the first row of surrounding wells. Similar work is underway on the platform. But all of this is of an experimental nature. It is time at last to pass from experiments to industrial introduction of tertiary methods of oil extraction.

"Yes, there are still many unresolved problems," says the head of the NGDU B. Khalilov. "And now, when socialist competition is unfolding for a worthy meeting of the 60th Anniversary of Formation of the USSR, and practical work for implementation of the decisions of the November (1981) Plenum of the CPSU Central Committee and the instructions of Comrade L. I. Brezhnev given in the speech at it, the workers and specialsts see their duty as more rapid putting into operation of the oil extraction reserves, and guarantee of a good reserve for successful work in the future, anniversary year."

9035
CSO: 1822/63

DRILLING PROBLEMS AT PIRSAGAT OIL FIELD REVEALED

Baku VYSHKA in Russian 13 Dec 81 p 2

[Article by O. Nechipurenko: "Second Birth of Pirsagat"]

[Text] This is a deposit which seems to be a continuation on land of the Sangachaly-Duvannyy offshore oil and gas field which has been known for a long time. The wells that were drilled here in the 1930's to a shallow depth had a daily yield of hundreds of tons of oil. Over the years the reserves of the upper Pirsagat series began to noticeably diminish however, and it was decided to begin drilling deep wells all the way to the seventh level of the productive layer. Now on the Pirsagat section of the NGDU [oil and gas extracting administration] "Karadagneft'," five producing wells yield about 200 T of oil per day. In the 11th Five-Year Plan in accordance with the order of the USSR Minister of the oil industry, N. A. Mal'tsev, the task was set of significantly increasing the oil extraction here and converting this section into a model oil field. For this purpose the collective of the Kyursangya UBR [drilling administration] must drill three wells in the northern section of the field next year. The brigade of the eminent drilling foreman, bearer of the Order of Lenin and the Order of the Red Banner of Labor Sarkhosh Mamedov recently began to drill one of them, No 109. Before this, it successfully drilled well No 106 to a depth of 3,600 m. It now duly yields tens of tons of pure oil daily. At the 109th however, the brigade came up against many organizational difficulties.

"We waited for half a month for the end of construction of the borehole," the foreman relates. "Of course we did not sit around with our arms folded. We helped the installers from the Ali-Bayramly derrick-installing office. But you can see for yourself that they left behind a lot of unfinished work."

In fact the borehole did not have a telpher crane or an automatic drilling key AKB. Despite the onset of winter, the drilling derrick, open to the wind from the sea, was faced with boards only to the first band.

"They promised to eliminate all of these unfinished projects," says the mechanic A. Dadashev, " but nothing has been done yet."

The borehole was standing when we visited it. The repairmen had changed the malfunctioned lifting shaft of the winch. It was obvious from everything that the worn-out set of drilling equipment that was to be used to drill this well would create many additional troubles for the drillers. It is true that the new brand of drilling pumps UZ-6MA2 have been installed here. But unfortuntely there are no spare parts or valves for them. They are a greater nuisance to the drillers than the old ones. The drilling rates are thus diminished and the drilling schedule is disrupted.

Development of the lower levels of the Pirsagat field is being held back by many other circumstances however. It was noted at the December Plenum of the Azerbaijan Communist Party Central Committee that high accident rate and defects in the drilling operations are caused by the low level of management, labor and production discipline. What happened at another Pirsagat well, No 108, which was drilled by the brigade of foreman G. Badalov, is only confirmation of this.

Here the main column, the producer, as it turned out, was not completely filled with cement, but only above the bottom hole of the well, in violation of the active regulations for "gas" wells. When the testing brigade led by foreman Makhabbat Khankishiyev from the same Kyursangya UBR began to work, the flaw was completely revealed.

I was shown the distorted end of the pumping-compressor pipe that was taken out of the well after the superhigh pressure of the formation crumpled the steel producer column.

"Usually well testing ends in a week," the driller G. Rzayev told us. "But we have been stuck here for 3 whole months, and there is no end in sight to the work."

One has to be very watchful of the position taken by the leaders of the Kyursangya UBR and the association "Azneft'" in this matter. Instead of delving deeply into the real causes of the defect in No 108 and taking effective measures so that errors are not repeated in the future, they began to search for objective reasons for the delay in development of the well.

"The whole problem is the poor quality pipes of the producer column," announced the head of the Kyursangya UBR Kh. Dashdamirov.

There is a similar unsubstantiated statement in the letter sent by the general director of "Azneft'" B. Gadzhiyev to the Ministry of the Oil Industry.

We were able to become acquainted with another document compiled in the association which covers the condition of drilling operations in this year and which is signed by the deputy general director of Azneft'" D. Ibragimov. It indicates that the reason for the large number of accidents and defects in the Kyursangya UBR, including at the 108th, is the poor control of the engineering and technical personnel over the technology of well drilling. The second statement is closer to the truth,in our opinion.

The unsuccessful and poor-quality cementing of the wells in the Kyursangya UBR is not new by the way. VYSHKA wrote about another case that occurred at well No 100 in Kyursangya over 2 years ago. We see that the UBR collective did not draw practical conclusions from this.

We were told, moreover, in the NGDU "Karadagneft'" for whom the Kyursangya workers are drilling this well, that during the check to rate crumpling of the producer column pipes it was found that they did not have a safety margin. In a word, the real fact of the existence of anomalously high formation pressures in the upper part of the geological section of the Pirsagat field seems to have been ignored in this case. On the other hand, when it is necessary to explain the overestimated weight of the drilling solution as compared to the plan, the drillers willingly take this fact into account. As we were told in "Karadagneft'," this is partly done in order to cover the losses of weighting compound, barite, during storage, transporting and preparation of the solution, or this is done by its above-plan conservation.

When speaking of the Pirsagat oil field, we usually have in mind its northern part. According to the original plan, it was suggested that detailed exploration be started in 1982 in the southern part of the field and make development wells of depth to 5,500 m to evaluate the productivity of the lower deposits: the Podkirmakinskiy series and the Miocene. It was recently decided to start this work a year later, although the geologists have no doubt about the promising nature of this field.

The oil and gas reserves of Pirsagat should be put at the service of the motherland as soon as possible, and at the same time a contribution should be made to the successful development of the fuel and energy complex of the country. Its enormous importance was noted at the November (1981) Plenum of the CPSU Central Committee. The efforts of the drillers, derrick builders and operators must now be aimed at this, the efforts of all on whom the success of this imporant matter depends!

9035
CSO: 1822/61

PROBLEMS ENCOUNTERED IN DEEP-WELL DRILLING IN KYURSANGYA

Baku BAKINSKIY RABOCHIY in Russian 27 Nov 81 p 2

[Article by O. Nechipurenko: "Problems of Great Depths"]

[Text] The metal framework of the base of well No 87 from which a powerful gusher of "black gold" emerged has become a unique symbol of the oil and gas field "Yuzhnoye Kyursangya" that was discovered in 1971. This gusher is at the same time a menacing warning telling the oil prospectors about the perfidy of the depths. The well has been operated for a long time through drilling pipes. Until now the rotor that had been used to drill the well had not even been successfully removed from its head.

Many deep wells have been built since then, but the problem of their successful and safe drilling has not yet been resolved. Anomalously high pressures in the beds, oil and gas appearances and unstable rocks at depths over 3,000 m require unfailing attention from the drillers and high skill.

The brigade of the Gobustan UBR [drilling administration] led by the head of the borehole G. Mamedov and foreman A. Zul'figarov recently found the 15th level of a productive layer in this field in well No 55 at a depth exceeding 5,500 m. The oil workers had previously obtained oil only from its first and second levels.

"This collective is finishing the drilling of the fifth well in south Kyursangya," says A. Turabov, the head of the geological department of the Gobustan UBR. "Oil was obtained from the majority of the wells."

But we should state immediately that this oil was gained at a high price. Accidents and complications occurred in drilling each well. A lot of time and money was spent on eliminating them. A serious accident occurred in the last, the 55th well.

The main operations for exploring the oil and gas content of the field have currently been entrusted to the drillers of the Kyursangya UBR. In order to outline the detected oil deposits to the 12th level of the productive layer and to search for new ones in the lower deposits, this year they drilled two development wells No 99 and 400 in the southeast perecline of the Kyursangya structure. Both of them are unfortunately now in an emergency state.

It has followed from conversations with the drillers that the scientists and planners from the AsNIPIneft' [Azerbaijan Scientific Research and Planning

Institute of the Oil Industry] bear a lot of the guilt for this. A reference was made to the fact that the well designs were not always compiled with regard for possible complications in the shaft, the underestimated weight of the drilling solution is knowingly designated, etc.

It should be admitted that the production engineers are partially right. The scientific laboratories are not studying in detail the physical-mechanical and other properties of the rocks to be drilled. The information regarding the amount of formation pressure in the depths is also very approximate. All of this results in definite miscalculations in determining the designs of the wells and working out geological and technical assignments.

But the drillers themselves are also quite guilty. If we speak about the specific weight of the solution, then there is a clear overcautiousness on their part. The fact is that in southern Kyusangya the situation usually does not lead to the discovery of a gusher. The solution that is pumped into the wells is simply returned, light, with gas.

Instead of degasification, the drillers sometimes knowingly overload it. This results in sticking of the tool and other complications. This happened in well No 99, although specific guilty parties of this accident are not named.

In our opinion the history of the accident in well No 400 has not been definitively clarified. It was drilled with over 2-month acceleration to a depth of 5,000 m by the brigade of foreman I. Aliyev. Technical malfunctions developed here even during the lowering of the producer column. Nevertheless, the proper attention was not paid to them, the column was cemented in, and the defect was only found later.

It is true that the commission headed by the chief of the department of drilling technology of "Azneft'" Kh. Mirzoyev came to the conclusion that the cause of this was a hidden defect in the pipes made by the Azerbaijan pipe-rolling plant. However, this can only be confirmed or refuted by taking the pipes from the well.

The brigade of I. Aliyev was doing precisely this when we arrived at the 400th well.

"Over 2,000 m of pipe have already been raised," the foreman says. "They seem to be intact. I personally hypothesize that the problem is the poor quality of the cement and the unsuccessful packing of the well."

The foreman's opinion deserves attention, however, for some reason no steps have been taken to check it. This could have been done with the help of an acoustical cement gage because there was sufficient time. Over 2 months passed after the unsuccessful lowering of the column.

This is the current situation at the promising section of the Kyursangya oil and gas field. According to the order of the minister of the oil industry N. A. Mal'tsev, an assault should begin soon of the new untapped depths, the third level of the productive layer, all the way to its 20th level. Active preparation for this is now underway. The optimal design of well has already been selected, for example. In contrast to previous wells, it provides for a "spare" casing column.

There is a lot ahead, however. It remains to provide the borehole with all the modern equipment for successful drilling under the complicated conditions of the field. It is most important to comprehensively study and creatively utilize the accumulated experience of drilling in the first two levels of the productive layer, to elevate the skill of the members of the drilling brigades, and to strengthen the labor and technological discipline. The efforts of the party, trade union, Komsomol organizations, leaders of the Kyursangya UBR and the entire collective must be aimed at this now.

9035
CSO: 1822/61

SPECIALIZED OFFICE SOLVES MANY 'AZNEFT'' OIL DRILLING PROBLEMS

Baku BAKINSKIY RABOCHIY in Russian 27 Nov 81 p 2

[Article by V. Rafiyev, director of the Specialized Office for Repair and Operation of Oil Field Electric Deep-well Units of the association "Azneft'": "Problems Solved in a Comprehensive Manner"]

[Text] As shown by the experience of the 10th Five-Year Plan, among the most promising methods for working oil beds is to extract with deep-well electric pumps. This has been reflected in the documents of the party congress. The Specialized Office for Repair and Operation of Oil Field Electric Deep-well Units of the "Azneft'" association is extracting oil not only in our republic, but also in Turkmenia, Georgia, and is also giving technical assistance to the oil workers of Kazakhstan.

Our specialized office is the only one of its kind with its structure in the enterprise. This is a plant which has shops for the production of all types of repair of pumps, and electric motors, and an oil extracting adminstration whose sections for oil extraction are in the 12 NGDU's [oil and gas extracting administration] of "Azneft'," "Turkmenneft'" and "Gruzneft'," and an experimental test site to check new electric deep-well equipment that has been developed jointly with a number of design offices and scientific research institutes of Moscow, Leningrad, Khar'kov and Baku.

The 10th Five-Year Plan for us was a period of intensive search for the optimal working variant. The electric deep-well unit is a complicated apparatus whose performance capacity depends both on the quality of work done by the specialized office itself (repair, installation, adjustment, start-up), and on the NGDU (selection of well, condition of power services, skill of the underground repair brigade, etc.). Initially there was this practice: we repaired a unit in our shop, transported it to the site, started it up, and our mission ended there. In the majority of cases, the unit malfunctioned earlier than the planned period. The NGDU accused the Specialized Office of poor quality repair or installation, the Specialized Office accused the NGDU of incorrect operation of the equipment, incorrect selection of the well. etc. Commissions were set up, orders were issued: there were many disputes and the business suffered.

After approving several variants for organizing the work, and mutual calculations between the Specialized Office and the NGDU, we suggested that the well-day be taken as the basis for the calculations: how much time the well operates and the NGDU pays for this amount of time, but on the condition that our specialists participate in the operation of the units. This principle permitted a considerable improvement in the mutual control and interest of the cooperating enterprises, improved the quality of repair of the units, reduced the installation period, and promoted the introduction of advanced technology. This resulted in an average 8 day increase in the inter-repair period of the units. Thousands of tons of additional fuel have been extracted. Our collective was a participant in the USSR VDNKh [Exhibition of Achievements of the USSR National Economy]. The oil workers of Tatariya, Bashkiriya, Kuybyshevskaya and Tyumenskaya Oblasts are studying the experience of work and the structure of our enterprise. These areas are making greater use of electric deep-well pumps.

Nevertheless, the needs of the oil extractors (primarily "Azneft'") for electric deep-well units have far from been completely satisfied. At the same time, the geography of the oil-bearing areas where extraction of fuel by other methods is impossible, or economically inexpedient is expanding. Each oil-bearing region has its own peculiarities and specific nature. In a word, the task is becoming more complicated, and it is impossible and will cost a pretty penny to solve it merely by increasing the number of introduced units. There is one way out: to drastically increase the inter-repair periods of the units. By the end of this five-year plan it should be no less than 120 days (today 58 days) for the wells that are operated by our Specialized Office, with a simultaneous increase 1.5-fold (as a minimum) in the number of operated wells, to 650 units. After discussing its potentialities, our collective decided that it could bring this number to a thousand if the builders fulfill their assignment for reconstruction of the enterprise. (In the last five-year plan, they fulfilled the work plan only by 30%). The task set by us is also difficult to fulfill because the characteristics of the pumped-out liquids in the republic fields are very severe. For example, the content of mechanical admixtures (mainly sand) is 10-12-fold above the average union norms.

All of these problems can only be solved in a comprehensive way. In addition to reconstructing the shops, we are searching for basically new designs of pumps, materials, as well as the maximum use of the potentialities of the series-manufactured units. There are nuances here too. At one time there was a reigning opinion of the need to reduce the number of type-sizes of the manufactured units to a minimum. As a result, the oil extractors received a meager selection of units. Often they had to lower into a well, say of 800 m, a unit that was designed for a depth of 1,400, and sometimes 1,750 m. Surplus pressure, increase in diameter of the pipes and length of the cable, idling of the working parts of the pump, etc. were the result. We were against the reduction in the number of type-sizes of units from the very beginning, proving that the operators must have the opportunity under specific conditions of the field to arrange the pumps with optimal pressure and supply of liquid, that is, the industry must manufacture the units in module design. Life has confirmed our correctness: today in all the oil extracting regions of the country where this method of extraction has been introduced and the repair base is poor, the question of module units is an urgent one on the agenda. Fortunately, the Specialized Office of "Azneft'", having a good repair base, was able to reduce the dependence on the shipments of industry. By making the appropriate design changes in the series-produced units, we lower into the wells in the majority of cases electric deep-well pumps in the optimal variant.

But it is impossible to solve all the problems by the efforts of the Specialized Office without the help of the scientists and designers. Our enterprise closely cooperates with them. Thus, an experimental electric deep-well pump of increased abrasion-corrosion resistance has been made jointly with the Special Design Office for Rodless Pumps (OKB BN) in Moscow. Testing indicated that it has a significantly longer inter-repair period than those currently used. But the introduction of the new pumps is being delayed by the shortage of nickel needed to smelt the special "nonresistant" type pig iron. When there is a positive resolution of the nickel allocation problem, the oil workers of the republic will receive a unit that not only will promote an increase in oil extraction from the currently operating wells, but will also make it economically advantageous to operate hundreds of wells where it is now economically inexpedient to equip them with electric deep-well pumps.

Here is a second example. Several thousands of wells with low output (to $40\ m^3$ of liquid per day) and low inter-repair period are operating in "Azneft'" with sucker-rod pumps. The sucker-rod pumps are the yesterday and today of "Azneft'." The electric deep-well diaphragm pump that was developed by the Specialized Office jointly with the OKB must become the tomorrow for "Azneft'" in our opinion. It has an inter-repair period that is 3-5-fold higher than the sucker-rods. When it is used, the consumption of pipes is diminished, their diameter is reduced, and sucker-rods are not needed. The new pump has 2-fold less metal consumption than the sucker-rods. This is why (although the plan for development of new equipment does not stipulate this) the administration and the party office of the Specialized Office, based on the decree of the CPSU Central Committee and the USSR Council of Ministers "On Strengthening Work for Conservation and Efficient Use of Raw Material, Fuel and Energy, and Other Material Resources," made a decision to be immediately involved in final development and testing of the diaphragm pump in Azerbaijan. We have set up a section for its experimental operation. It is now a matter of involving in this work the largest possible group of oil specialists and creating necessary conditions for a creative search. If the new pump passes the breaking in under the harsh conditions of operation in the oil fields of Azerbaijan, after slight design changes it can be introduced into other oil regions of the country. This is a very important matter and requires more attention.

The collective has successfully fulfilled the 10-month plan for the first year of the five-year plan. This is a reliable basis for the early completion of the plans for the entire five-year plan. Greater dissemination is being given to the initiative of the 3 brigades and the 80 workers of the Specialized Office who have committed themselves to completing the five-year assignment ahead of schedule. They include the communists pump assembler D. Pashayev and presser M. Baragtareva who decided to produce two five-year standards, turners K. Sarukhanov, A. Alekperov, Ye. Balandov and electricians A. Salayev, T. Tskhovrebov and others who have committed themselves to fulfill their personal five-year plans ahead of schedule. The administration, party office and ideological active membership are supporting in every possible way, developing the labor initiative and doing everything on their part to fulfill the decisions of the 26th CPSU Congress on increasing the extraction of oil by electric deep-pump wells, and intensify the struggle for conservation and economy.

9035
CSO: 1822/63

EFFICIENT PRODUCTION, USE OF FUEL STRESSED

Kiev RADYANS'KA UKRAYINA in Ukrainian 21 Nov 81 p 2

[Article: "Modern Prometheus"]

> [Text] The party issues an appeal: the plan calls for a substantial increase in energy and fuel production, especially natural gas. But this country's requirements are also growing rapidly. Therefore the plan specifies utilization of all available techniques and incentives to economize in fuel and energy. At the same time, fuel and energy production targets must be exceeded. (From speech by Comrade L. I. Brezhnev at the CPSU Central Committee Plenum on 16 November 1981).

The fact that figures on kilowatt hours of electricity produced stand at the top of all Central Statistical Administration reports reflects the place of the power industry in our lives. Although of course the fruits of efforts expended in this industry should not be appraised in kilowatt hours but primarily in terms of efficiency of their utilization. That is, the cost and quality of goods produced with the aid of energy, and the degree of comfort at the workplace or in the home -- that is, end results.

By the end of the current five-year plan electric power output will reach 1555 billion kilowatt hours. This represents an increase of 260 billion kilowatt hours over the 1980 figure, comparable to the annual output of 13 power stations with the same output as the Krasnoyarsk GES, the world's largest hydroelectric power station.

A new constellation of nuclear power stations will appear on the map of this country by the end of the current five-year plan. It is interesting to note that the total electric power production increase in the European part of the USSR will be contributed by nuclear power plants.

Just as a river begins at its source, so does the energy river begin at its raw material base. The socialist economy is focused on an intelligent combining of all types of fuel and energy resources.

How will this country's energy resources grow? By the end of the present five-year plan production will increase to 630 million tons of crude oil and gas condensate. This is 27 million tons more than in 1980. The largest increase will be achieved in Western Siberia, the Komi ASSR, Kazakhstan, and the Udmurt ASSR.

It has been calculated that during the present five-year plan natural gas production will increase by 45 percent over the level of the preceding five-year plan. In 1985 we shall produce 630 billion cubic meters.

Coal production is also targeted for a substantial increase -- 59 million tons over the 10th Five-Year Plan. Coal production will reach 775 million tons in 1985.

During the five-year plan there will be an expansion of the network of arteries along which natural gas, crude oil and refined products are transported. The total network will increase by 64,000 kilometers. By way of comparison, if these pipelines were stretched in a single string, it could circle our planet at the equator one and a half times. In particular, five great trunk natural gas pipelines from Western Siberia to the central part of our country are scheduled to go into operation, as well as the Urengoy-Uzhgorod export natural gas pipeline.

In order to ensure a full flow of energy and fuels, it is necessary not only to increase production; it is no less important to consume these resources thriftily. Each and every one of us must be a thrifty manager not only at the workplace but in the home as well.

Our plans also cover tomorrow's development of the fuel and energy complex. The party is assigning workers in science and technology the task of developing new sources of energy. In particular, there will be large-scale construction of fast-breeder reactor nuclear power plants, steam-gas generator units, and a 500,000 kilowatt magnetohydrodynamic generator. Thermonuclear power plants will be developed.

This country's wealth, its strength and energy lie in people, their conscious and purposeful actions aimed at continuous strengthening of the might of our homeland. In this noble cause today's Prometheuses are speeding the advance of society to new summits of progress.

The criteria of quality and efficiency are clearly evident in the development plans contained in the 11th Five-Year Plan for the metallurgical industry and machine building. In ferrous metallurgy, for example, main emphasis will be placed on improving quality and expanding output of efficient products. There will be increased output of high-productivity and economical machinery.

3024
CSO: 1811/17

GAS PIPELINE THROUGH UKRAINE DISCUSSED

Kiev RADYANS'KA UKRAYINA in Ukrainian 6 Dec 81 p 1

[Interview with M. O. Ishutin, director of the All-Union Scientific Research and Design Institute for Natural Gas Transport, by RADYANS'KA UKRAYINA correspondent V. Tymoshenko; date and place not given: "Great Mainline"]

> [Text] Our newspaper has reported in the past about the Urengoy-Uzhgorod export natural gas pipeline, a major construction project of the 11th Five-Year Plan. The staff of RADYANS'KA UKRAYINA, together with the staffs of the newspapers of the nine oblasts in the Ukraine through which the pipeline route passes, have been closely monitoring construction of this pipeline on the territory of our republic. Now we have learned that specialists at the All-Union Scientific Research and Design Institute for Natural Gas Transport (Kiev) have prepared the working drawings for construction of a 40-kilometer section of the Urengoy-Uzhgorod natural gas pipeline, the first section to be built in the Ukraine. Institute director M. O. Ishutin comments on this in an interview with our correspondent.

[Question] The events connected with construction of the Soyuz natural gas pipeline, design of which also involved your institute's participation, are still fresh in our memory. And now we have a new pipeline. Mykola Oleksiyovych, can you compare these two pipelines?

[Answer] The new trunk natural gas pipeline, just as its predecessor, the Soyuz, will be used primarily for export of natural gas, although it will have more than 50 terminal branch taps in our republic alone. This means that it will help improve supplying of natural gas in certain oblasts, towns and villages. Both pipelines will promote strengthening of our country's international economic cooperation — both with the nations of the socialist community and with capitalist countries. When it was built, the Soyuz incorporated the latest advances of science and technology and became one of our most sophisticated natural gas pipelines. But several years have gone by since its construction, and today, in designing the Urengoy-Uzhgorod trunk line, we are turning to new, much more sophisticated machinery and equipment, which will ensure its uninterrupted operation. The new line is being built of 1420 mm diameter pipe, and the compressor stations which will be built along this line will contain turbines with two and a half times the power output as at the stations on the Soyuz pipeline. One interesting fact is that these stations will be much more compact and require fewer operating personnel. There is also another important difference. The new trunk pipeline will actually be two lines in parallel, and will be much longer -- more than 4600 kilometers. This is currently the longest natural gas pipeline not only in this country but in the world as well.

[Question] What are the specific features of the pipeline route on the territory of our republic?

[Answer] The route extends more than 1200 kilometers through the Ukraine. It will be necessary to cross two major rivers, the Dnieper and the Dnestr. On the Dnieper floodplain and in the river proper, at the crossing site a little to the north of the Kremenchug Reservoir, the pipe will lie right on the river bottom, while on the Dnestr crossing we shall employ massive reinforced concrete supports, placed at a maximum separation distance of 45 meters. Without question, however, the most difficult stretch will be in the Carpathians where, for example, in some places elevation differentials amount to thousands of meters. Future construction of the pipeline in the Carpathians demands an extremely careful, technically knowledgeable, sophisticated design effort. For this reason our survey parties, headed by O. Savenko, V. Lutsenko, V. Drobyts'kyy, and V. Mazurenko, are working particularly hard and intensively on the western stretches of the route.

[Question] How many compressor stations will be built on the territory of our republic?

[Answer] Nine. And since the route of the new pipeline will run near the route of the Soyuz, three of them will be combined operations, that is, requisite equipment will be added to stations already in operation, and an additional building will be erected. The construction plans of these compressor stations will be produced at our institute and at the Soyuzgazproyekt Institute, which is also located in Kiev.

[Question] The Urengoy-Uzhgorod natural gas pipeline is one of the most important and biggest construction projects of the 11th Five-Year Plan. Designers and planners are already working on execution of this project. How have they responded to these important tasks?

[Answer] Design institute specialists, especially our own, responded with a sense of great responsibility to the tasks stated in the speech of CPSU Central Committee General Secretary Comrade L. I. Brezhnev at the November Plenum of the CPSU Central Committee, pertaining to accelerated construction of this pipeline. They pledged to prepare the technical documentation on a tight timetable. In the first quarter of next year this republic's construction workers who will be working on the natural gas pipeline will receive all working drawings. The very magnitude of the pipeline project and its great importance for our country impose very high demands on quality of design. Aware of this fact, those specialists involved in designing this trunk pipeline are contributing all their knowledge and experience toward optimal implementation of the tasks specified by the party.

3024
CSO: 1811/18

TASKS OF UKRAINE NATURAL GAS WORKERS OUTLINED

Kiev RADYANS'KA UKRAYINA in Ukrainian 23 Dec 81 p 1

[Article: "Natural Gas Meets Year's Target"]

[Text] An important achievement has been recorded at this republic's natural gas industry dispatcher center: this year's plan target for production of natural gas and condensate has been met. In winter, when demand for energy resources increases substantially, this success on the part of our gas producers assumes particular importance.

"The workers of this branch, aware of their great responsibility for implementation of the fuel and energy program specified at the 26th CPSU Congress, are overfulfilling this year's tough socialist pledges," stated O. G. Tumanov, chief of the Ukrgazprom All-Union Industrial Association, to a RATAU correspondent. "An additional hundreds of millions of cubic meters of natural gas will be produced, as well as thousands of tons of light refined products. This makes it possible to enlarge our clientele. Nine cities and towns and many villages in this republic have begun receiving natural gas."

The hard work done by the Ukraine's gas producers has received high praise. The association's work force was named winner of the all-union competition in the first three quarters of the first year of the current five-year plan and has been awarded a challenge Red Banner of the branch ministry and trade union central committee.

In spite of difficulties connected with a natural decline in well production flow, gas field workers are finding ways to maintain a high level of production. This year two new gas-condensate fields -- the Sementsovskoye and the Chervonoyarskoye in Poltavskaya Oblast -- were brought into production on an accelerated basis. A total of 55 gas wells were drilled, including two above plan. A total of 435 kilometers of trunk natural gas pipelines have been constructed, and a more than 200 km segment of the Yelets-Kursk-Kiev natural gas pipeline and one of six major trunk pipelines between Western Siberia and the central part of this country were completed.

Success has also been promoted by a great deal of work to intensify production and to increase gas yield from producing formations. The method of reinjection of dehydrator-treated and impurity-removed gas to maintain formation pressure was employed for the first time in the Soviet Union in the Novotroitskoye gas field in

Poltavskaya Oblast. This makes it possible to obtain an additional 20 percent gas condensate yield. Also extensively employed is treatment of producing formations with acid foam in place of the conventional hydrochloric acid treatment.

Considerable attention is being focused on fuller utilization of raw materials. The association's specialists have developed a program of integrating gas treatment equipment which will help recover many valuable components for the nation's economy. Now it is up to Glavukrneftegazstroy. It is necessary to speed up construction of such facilities in Khar'kovskaya, Poltavskaya and Dnepropetrovskaya oblasts. When these facilities come on-stream, it will be possible to obtain additional tens of thousands of tons of condensate each year.

The workers of this republic's gas industry, in light of the demands of the November (1981) CPSU Central Committee Plenum, must accomplish new, large-scale tasks focused on dynamic growth and development of the fuel and energy complex. It is essential to build the Urengoy-Uzhgorod natural gas pipeline, one of the major construction projects of the current five-year plan, on an accelerated schedule. Preparatory work is already in progress. Soon well drilling will also begin in the Urengoy gas-condensate field in Tyumenskaya Oblast.

At the threshold of the new year, the work forces of the association's enterprises are adopting tougher pledges pertaining to accomplishing the tasks of the 11th Five-Year Plan and to honor the 60th anniversary of the USSR.

3024
CSO: 1811/18

BRIEFS

IMIDE ADDITIVE SHOP--Kremenchug, Poltavskaya Oblast, 3 Dec--The imide additive shop at the Kremenchug Oil Refinery has turned out its first product. One can scarcely exaggerate the importance of this at first glance golden liquid. It possesses many exceptionally important properties: neutralizing, anticorrosion, cleaning, and is used as a component in motor oils. It increases diesel engine life by 3 percent, while oil consumption is reduced by one fourth in normally-aspirated engines. Adding imide additive to fuel significantly expands the climatic zones of engine utilization. Construction workers of many trusts and administrations of Poltavskaya Oblast worked on building this shop, which is one of the most important construction projects of the current five-year plan in Poltavskaya Oblast. Outstanding performers include the brigades of H. Shokalo, S. Pavlenko, A. Yakubenko, V. Kharchenko and many others. The Kremenchug chemical workers achieved their labor victory in the national competition to honor the 60th anniversary of the USSR. [By V. Mayorchyk] [Text] [Kiev RADYANS'KA UKRAYINA in Ukrainian 4 Dec 81 p 1] 3024

ROVNO NUCLEAR POWER PLANT--Kuznetsovsk, Rovenskaya Oblast, 3 Dec--The construction work force on the Rovno Nuclear Power Station has achieved a new victory. The startup process on the second generating unit has begun. V. Holub's shift placed the first nuclear fuel elements in the reactor core. The pace of loading the reactor with fuel is increasing. Soon a series of physical experiments will begin, during which the reliability of the power generating unit will be tested. The final phase of the startup process -- bringing the reactor up to minimum controllable output level -- will take place within days. Soon the second unit at the Rovno Nuclear Power Station will be producing electricity. The work forces of contruction workers, installation crews and power plant operating personnel have set for themselves the goal of making a worthy contribution to the shock-work labor shift in honor of the 60th anniversary of the USSR. [By S. Mel'nychuk] [Text] [Kiev RADYANS'KA UKRAYINA in Ukrainian 4 Dec 81 p 1] 3024

KHAR'KOV NATURAL GAS PRODUCTION--The November CPSU Central Committee Plenum attached great importance to growth and development of the fuel and energy complex. The gas field workers of Khar'kovskaya Oblast are making a contribution toward solving this important problem. The work forces of the Shebelinskoye, Khrestishchenskoye, and Yefremovskoye gas field administrations are doing a fine job. Suffice it to say that since the beginning of the year they have already produced above target a billion cubic meters of natural gas. Backing up the initiative of their Tyumen' colleagues, the gas field workers of this oblast are taking part in the competition for ahead-of-schedule completion of the five-year-plan fuel production target. They have pledged to produce above target by the end of this year 250 million cubic meters of gas. Production of natural gas earmarked for a second above-target billion cubic meters is proceeding successfully. This has become possible thanks to adoption of new technology, automated gas production processes, as well as socialist competition under the slogan "Sixty shock-work weeks in honor of the 60th anniversary of the USSR!" The rate of natural gas production is continuing to increase. [By I. Dmytrenko] [Text] [Kiev RADYANS'KA UKRAYINA in Ukrainian 4 Dec 81 p 1] 3024

CSO: 1811/17

END

END OF FICHE

DATE FILMED

MARCH 11, 1982